PERIODICAL

OCT 29

PROCEEDINGS

OF THE

American Philosophical Society

Held at Philadelphia for Promoting Useful Knowledge

VOLUME 92, NUMBER 4 OCTOBER 25, 1948

Papers dealing with

THE RELATION BETWEEN INTERNATIONAL AFFAIRS AND THE TRADITIONAL AMERICAN SCENE

THE R. A. F. PENROSE, JR., MEMORIAL LECTURE

Other Papers

THE AMERICAN PHILOSOPHICAL SOCIETY
INDEPENDENCE SQUARE
PHILADELPHIA 6
1948

The *Proceedings* of the American Philosophical Society is published as an annual volume and ordinarily is issued in five numbers. An author desiring to submit a manuscript for publication should send it to the Editor, Luther P. Eisenhart, American Philosophical Society, 104 South Fifth Street, Philadelphia 6, Pa.

The annual subscription price is five dollars; combined with a subscription to the *Transactions* the price is ten dollars. Individual copies of the *Proceedings* are offered for sale. This issue is priced at one dollar.

LANCASTER PRESS, INC., LANCASTER, PA.

CONTENTS

THE RELATION BETWEEN INTERNATIONAL AFFAIRS AND THE TRADITIONAL AMERICAN SCENE

Papers read at the Annual General Meeting, April 22–23, 1948

The Evolving Role of Congress in Foreign Affairs. BENJAMIN V. COHEN 211

International Policy and Governmental Structure (Chiefly Executive). ARTHUR W. MACMAHON 217

Foreign Economic Relations of the United States and their Impact upon the Domestic Economy. SIMON KUZNETS 228

The Influence of Foreign Developments on the American Economy. FRIEDRICH A. LUTZ 244

The Impact of External Affairs upon American Public Opinion. CARROLL BINDER 249

The Repercussions of Foreign Affairs on the American Tradition of Civil Liberty. ROBERT E. CUSHMAN 257

Trends in the Traditional Relation between Military and Civilian. HAROLD SPROUT 264

THE R. A. F. PENROSE, JR., MEMORIAL LECTURE, 1948

An Attempt at Perspective. ROBERT B. WARREN 271

OTHER PAPERS

The Prehistoric Archaeology of Tangier Zone, Morocco. HUGH HENCKEN 282

An Unfamiliar Mechanism of Disease Transmission. RICHARD E. SHOPE 289

The Mechanism of Wounding by High Velocity Missiles. E. NEWTON HARVEY. 294

Public Spirit and American Improvements. CARTER GOODRICH 305

Cepheid Variable Stars in the Small Magellanic Cloud. HARLOW SHAPLEY and VIRGINIA MCKIBBEN NAIL 310

THE EVOLVING ROLE OF CONGRESS IN FOREIGN AFFAIRS

BENJAMIN V. COHEN

Formerly Counsellor, U. S. Department of State

(Read April 22, 1948, in the Symposium on the Relation between International Affairs and the Traditional American Scene)

I

In considering the evolving role of Congress in foreign affairs, it is natural to think of that role in the light of the grave responsibility cast upon our country by the changes resulting from the recent world war. Even before the last cataclysmic war, however, serious thinkers, in this country as in other democratic countries, were giving their attention to the growing need not only of democratic control of foreign policy but also of democratic participation in the shaping of foreign policy which in the modern world affects the well-being of the people as much as or even more than the domestic program of government.

In his stimulating little book on *Diplomacy*, published in 1939, the eminent British publicist, Mr. Harold Nicolson, writes:

> Before the war of 1914–1918 the ordinary elector in Great Britain, in the Dominions and in the United States took but a spasmodic interest in international relations. . . . There was a feeling that foreign affairs was a specialized and esoteric study, the secrets of which lay beyond the scope of the ordinary layman's experience or judgment. And there was a tendency to leave the conduct of foreign policy to the Cabinet and its attendant experts. . . .
>
> The war of 1914–18 did much to change this negative or acquiescent attitude. On the one hand it was realized that a country might be committed (without its full knowledge, deliberation and approval) to policies involving definite pledges to foreign powers. And that if a major crisis arose, the people might be faced overnight by the alternative of having either to repudiate promises which had been made in their name, or else to plunge into hostilities. On the other hand it was known that modern warfare is not confined in its effects to those professional soldiers and sailors who of their own free will have selected the profession of arms; but that it entails upon every individual citizen anxious ordeals, heavy anxieties and appalling dangers.

The recent war has greatly increased, in democratic countries, the demand of the people who bear the brunt and agony of modern warfare for a more direct and more compelling voice in the determination of policies upon which the issue of war or peace may depend.

II

Under the constitution the President has power to make treaties, "by and with the advice and consent of" two-thirds of the Senate. But our national commitments in the field of international relations are by no means limited to treaties. Since the beginning of the Republic, policies of vital importance have been promulgated by the President with the concurrence of a majority of both Houses of Congress, and significant international commitments have been made by executive agreement or declaration without express Congressional agreement.[1] Indeed, it has been noted that while this country has in its history been party to some 850 treaties, it has effectuated more than 1,400 international agreements by executive agreement with or without legislative action.[2]

Principle and precedent would seem to indicate that the authority of Congress, within the broad sweep of its legislative powers, to direct or sanction international arrangements is virtually coextensive with the authority of the Senate by two-thirds vote to ratify such arrangements.[3] Certainly, in the rapidly moving modern world, where governmental action must be prompt to be effective, and positive significance is often attached to nonaction, the formal procedure for treaty ratification by two-thirds of the Senate has become anachronistic. Besides being less democratic and representative, that cumbersome procedure tends to strengthen intransigent minorities rather than to

---

[1] Dickey, John Sloane, Our treaty procedure versus our foreign policies, *Foreign Affairs* **25**: 357, April 1947.

[2] McClure, Wallace M., *International executive agreements*, 3–4, N. Y., Columbia Univ. Press, 1941; MacDougall, Myres S., and Asher Lans, Treaties and executive agreements, *Yale Law Journal* **54**: 181, 262, 1945; Borchard, Edwin M., Executive agreements, a reply, *Yale Law Journal* **54**: 616, 626–627, 1945.

[3] *Cf. U. S.* v *Curtiss Wright Export Corporation*, 299 United States Reports 304.

unite the country and to assure the broadest possible support for a truly national foreign policy. In fact, with a few notable exceptions, such as the Charter of the United Nations, the Treaty of Versailles, and the recent Peace Treaties, legislative authorization or approval by a majority of both houses of Congress has become the more normal procedure for making effective the most important arrangements with other countries. This more flexible procedure for the democratic control of our foreign policy has been used, for example, in the case of the Reciprocal Trade Agreements, the Bretton Woods Agreements for the International Bank and the International Monetary Fund, the Lend Lease Agreements, the Greek and Turkish Aid Agreements, and more recently Secretary Marshall's European Recovery Program.

The requirement that treaties be ratified by two-thirds of the Senate has, in practice, been largely frittered away. What if anything remains of it is likely to prove an obstacle to, rather than a safeguard of, the effective democratic control of our foreign policy. It is noteworthy that Secretary Hull in his *Memoirs* reaffirms his belief in a constitutional amendment that would scrap the two-thirds rule in favor of a simple majority. Such an amendment would eliminate any lingering doubt as to the plenitude of Congressional power in the conduct of foreign relations, and would allay misgivings, as to the propriety and effectiveness of less formal agreements, which might, in a critical emergency, create serious embarrassment for our country.

There are of course occasions when the President must act on his own responsibility. From Jefferson's Purchase of Louisiana and President Monroe's enunciation of the important doctrine which bears his name, to President Roosevelt's Transfer of Destroyers for Bases and his agreements for the defense of Greenland and Iceland, there have been numerous instances, even when the country was formally at peace, when the President, without awaiting formal Congressional action, entered into important international agreements necessary to protect the national interests in a pressing emergency.[4] In making a vitally significant declaration or entering into an important executive engagement, the President must, however, be very conscious of the fact that, unless a majority of the Congress is willing to accept or acquiesce in his action, the accomplishment of the purposes of his declaration or engagement is likely to be thwarted.

Similarly, moral and sometimes legal commitments will arise from votes cast on the instruction of the President or Secretary of State in various organs of the United Nations or of other international organizations of which we have recently become a member. But most if not all of these commitments will involve Congressional action at some stage for their full honoring or effective fulfilment.

III

But more important than the formal procedures for legislative control of foreign policy is the need for democratic cooperation in the shaping of the substance of that foreign policy. The power to restrain is not sufficient when action, often prompt action over a wide field, is imperative. The executive may by its unilateral action put Congress and the country on the spot, and Congress and the country may not, simply by refusing to go along, be able readily to get off the spot. Congress can embarrass the executive by ill-advised action or by the withholding of appropriations. But deadlocks do not create policy and splitting differences can frequently result in a policy which is difficult of any rational defense. Doubts as to how our government will act or whether it will act at all can gravely imperil not only our leadership and influence but our own security in this dangerously interdependent world. As former Secretary of State Byrnes has said: "Twice in our generation doubt as to American foreign policy has led other nations to miscalculate the consequences of their actions. Twice in our generation that doubt as to American foreign policy has not brought peace, but war." [5]

With our abandonment of the policy of isolationism, the executive branch requires the constant and continuing support of Congress to carry out its responsibilities in foreign affairs. This support can be obtained only by constant and continuing cooperation between the two great branches of our government.

It is one thing, of course, to recognize the need of cooperation between the executive and legislative branches and quite another thing to devise the means of effectuating that cooperation. The latter

[4] Compare, also, *U. S.* v *Belmont*, 301 United States Reports 324; *U. S.* v *Pink*, 315 United States Reports 203.

[5] Address before American Club, Paris, October 3, 1946.

task is particularly difficult for us under a constitution framed on the principle of the separation of powers. In countries having a cabinet form of government, where executive leadership and legislative leadership are merged, the task, generally speaking, is much easier. If the cabinet cannot maintain its support in the parliament it ceases to be the cabinet. With us the leadership of the executive branch is not only distinct from the leadership of Congress, but even the authority of Congressional leaders to speak for the Congress is amorphous and uncertain. Individual members of Congress are very jealous of their own independence and often are lacking in any appreciation of their collective responsibility. There is rivalry at times between the two houses, between committees of the two houses, and between committees of the same house. The weight given to seniority in committee assignments and advancements does not always bring to committee leadership those best able to give or to secure cooperation. Members of the Congress are inclined to forget at times that the actual administration of foreign affairs subject to the law of the land is the constitutional function of the executive branch. Congress at times is not content to lay down sensible standards and rules to guide the executive branch but tries to control the *minutiae* of administration. A hamstrung administration is seldom an effective administration. Effective liaison between the executive branch and Congress is not easy. It was commonly remarked during the last war that some of our very important war leaders had to spend so much time with Congressional committees that they had scarcely time to take care of their own executive work.

But these difficulties—real as they are, and dangerously obstructive to the realization of an effective foreign policy as they at times are—must not be exaggerated. The members of Congress as well as the members of the executive branch want to serve the best interests of their country. Recalcitrance in the Congress may represent recalcitrance of important segments of public opinion. Democratic cooperation in foreign affairs cannot be secured by mere formal observance of Congressional etiquette. It can be achieved only on the basis of an informed understanding with adequate opportunity for informed and constructive criticism.

No one will deny that in the difficult problems of foreign affairs and national security we must to an increasing degree rely upon the expert opinion and on the professional knowledge of the trained civil servant and the military specialist. But as "A.E." (George William Russell), the Irish publicist, has said, "The expert should be on tap, but not on top." While some politicians in their ignorance may be scornful of the knowledge of the expert, some experts with their specialized knowledge may be ignorant of the human forces and considerations which give democracy its strength. Experts and specialists in the field of international relations can learn much from Congress. It must be remembered that many members of the Congress in questioning the opinion of the expert are trying not to obstruct constructive action but rather to find ways and means to make constructive action acceptable and understandable to the people they represent.

In addition to a general recognition of the need for receptiveness to cooperation and joint action, there are several specific practices which, in my opinion, are conducive to effective democratic action on foreign policy. In the first place, cooperation between the executive and Congress must take into account the facts of our political life. One such fact is the two party system. And it is fortunate that in recent years there has been a growing recognition of the need for a bipartisan foreign policy.

A bi-partisan foreign policy in fact fits in more readily with our two-party system than might be apparent on first impression. It is the splinter party systems that foster the sharpest divisions on party lines. Under our two-party system neither party can afford to take extreme positions on highly controversial issues. Both parties are under compulsion to strive for the support of people of differing views on important issues. Consequently the competition between our two major parties is not to sharpen divisions among our people but to develop programs that will have the greatest common appeal.

Democratic support of foreign policy necessarily involves democratic control of foreign policy. The purpose of bi-partisan collaboration in foreign policy is not and should not be to circumvent democratic control of foreign policy, but to promote effective democratic participation in shaping that policy. Its purpose is not to eliminate public discussion or criticism, but rather to render our foreign policy less vulnerable to criticism in democratic debate. A bi-partisan international policy can and will succeed only if there is genuine bi-partisan collaboration in the development of that

policy. So far as is practicable, therefore, the leaders of both parties should be consulted before and not after important decisions and declarations are made, just as there should be consultation on important Congressional programs before and not after they are submitted. Of course in event of genuine difference on basic principles, political leaders must accept the responsibilities of leadership. There must be no bi-partisan deals to deprive the people in a democracy of their right to control the foreign policy of the nation.

While the actual conduct of foreign relations must be the responsibility of the President, the inclusion of Congressional leaders in delegations to major international conferences is of the greatest importance. Working with the Executive on such delegations, Congressional leaders learn at first hand the problems of the other branch, and State Department officials and experts learn that Congressional leaders are not prima donnas or rubber stamps, that they too know how to work and share responsibility. Certainly the active participation of Senator Vandenberg and Senator Connally in the United Nations Assembly and the Council of Foreign Ministers has been most helpful in forging powerful bonds of cooperation between the executive branch and the Congress. I regret that in the last year there has been a tendency to omit Congressional leaders from our delegations to the United Nations Assembly and to other important conferences.

Of course, it should not be necessary to note, cooperation in this respect is a two-way street. While it is important that the President and Secretary of State should not take important action in the field of foreign policy without consultation with Congressional leaders, it is equally important that Congressional leaders and Congressional committees should not take a stand on important questions without consultation with the executive branch. It is not always easy for public men to recede from positions publicly taken, and the policy of prior consultation should be adhered to by the legislative as well as the executive branch of our government.

In addition to a cooperative attitude and sympathetic understanding of their joint task in the formulation of foreign policy, both Congress and the executive can take steps to improve their respective roles, and to increase their awareness and sensitivity to considered, intelligent, and disinterested opinion. No branch of government, and no professional or specialized service thereof, can assume to have a monopoly of wisdom or of virtue. Congress has very materially helped itself to become more effective in its increasingly important role in foreign affairs by the enactment of the La-Follette-Monroney Congressional Reorganization Act. That Act makes it possible for the standing committees to have efficient and competent staffs. These trained staffs of the important committees should, of course, concentrate upon the sifting and elucidation of the important issues that the committees must pass upon, and avoid the temptation of trying to function as a competing state department or national defense department. That does not mean that the staffs should not be in a position to make available to members of Congress ideas and views other than those originating in the executive departments. But it is their task to be expositors rather than advocates.

Congress can also on occasion be greatly helped by seeking disinterested advice from those in private life who are specially qualified to give it. Thus, for example, Senator Vandenberg requested the Brookings Institution to make a special report to the Senate Foreign Relations Committee on the administrative provisions of the European Recovery Program and this report greatly facilitated agreement on these provisions by the Committee and later by the Congress.

The importance of expert Congressional staffs, and expert independent advice, cannot be exaggerated. Democratic cooperation in foreign affairs can and should be something more than the rubber stamping of departmental recommendations and something more than a compromise between the shallow amateurism of uninformed minds and the cabined professionalism of the specialized services. A truly informed Congressional point of view frequently can constructively revise a departmental point of view so as to make the latter less vulnerable to popular attack and less offensive to deeply rooted feelings of important segments of public opinion. Departmental specialists not familiar with the working of Congress are often inclined to believe that Congress gives excessive weight to minority opinion; members of Congress sometimes feel, not without reason, that the departmental specialists, when they cannot fully meet a minority point of view, are inclined to ignore it completely. Few members of Congress would consciously support a minority point of view against what they conceive to be the best interests of the country. But most members of Congress realize, what specialists, in their zeal to

defend their own programs, sometimes forget, that democratic majorities are usually aggregations of minorities. The success of democratic cooperation in foreign affairs in the long run rests not upon our ability to get a majority vote on this measure or that measure, but on keeping our people as united as possible on the basic principles of our foreign policy. Congress can make its greatest contribution to this end with the assistance of independent experts who can understand and explain the position of the departmental specialists without being committed to support that position as if it were holy writ.

Of course, to make foreign policy more responsive to democratic forces requires a conscious striving to that end by the executive departments as well. It would probably facilitate constructive democratic cooperation in our foreign policy if more deliberate effort were made to fill the important political or policy-making offices in the State Department and National Defense Department such as the Under-Secretaryship and Assistant Secretaryships with men of wide and active experience in public affairs rather than those with technical administrative experience or men from the career service. This is not to say that there should not be places of equal rank, dignity, and compensation for trained administrators and permanent public servants. Indeed, there might well be an office of Permanent Undersecretary of State which should be held only by a ranking foreign service officer. But it seems to me a doubtful practice to have career men, at least while they are in the career service, in high political office. It accentuates the tendency, however unjustified, of the public and of some members of the Congress to think of the State Department or the National Defense Department as a collection of specialists out of touch with the average American's feeling and thinking. Our career foreign service, like the armed services, include men of real ability, devotion and character. They have great knowledge and they give their views, as is their duty, honestly and fearlessly. But as permanent public servants they should not be charged with the final determination of policy. When career men become the final arbiters of policy, their ability to give disinterested and objective advice may be seriously affected; at least, their ability to do so will be subject to serious question. Members of any specialized service have to work as a team, and their promotion depends upon their cooperativeness. It is a healthy safeguard for the foreign service and the armed services that they should test their thinking against that of men brought up closer to the thinking of the people.

During the war a great number of specialists, mainly with academic background but not trained in the foreign service, were brought into the State Department on special assignments. Tenseness would at times be evident in the relation between these men and the career officers, but their cooperation was, I am convinced, of great help to both groups. Many of the academic group have now returned to their universities and colleges, but their experience in the State Department will not only have marked effect on their own work, but will aid them in fostering a better understanding of our international problems in their respective communities. And that understanding in turn will affect the attitudes of Congressmen from those communities. It would, I think, be advantageous both for our universities and the State Department if exchange arrangements could be worked out so that some of our foreign service men could give our universities the benefit of their experience, and some of the academic specialists could give the State Department the benefit of their learning.

As with Congress, the executive branch can effectively advance democratic cooperation in the shaping of our foreign policy by enlisting the assistance of groups of representative and specially qualified citizens outside the regular government services. In the making of special studies on the problems of the peace and world organization, Secretary Hull and Undersecretary Welles had the benefit of weekly meetings with a committee composed of important senators and representatives, prominent and informed leaders of public opinion, and State Department officials. Close liaison with numerous public groups interested in the formation of the United Nations at the San Francisco Conference undoubtedly facilitated the ratification of the Charter. The constructive proposals for the control of atomic energy submitted by Mr. Baruch to the Security Council were based in large part on the work of the Acheson-Lilienthal committee which had the assistance of a panel of specially qualified industrialists and scientists. Likewise the work of the Harriman Committee composed of important industrialists and economists contributed much to the acceptance of the European Recovery Program by Congress and the public. The Compton Commission appointed by the President to consider universal military

training and the Finletter Committee appointed to consider a national air policy have likewise contributed towards a better public understanding of these difficult and important problems. While these committees have given great weight to the work done by the departmental staffs, they have in no sense been mere window-dressing. Their effectiveness has come from reviewing and reshaping the recommendations of the specialists so that they would have a better chance of public acceptance.

If we are to have democratic cooperation in international affairs, both Congress and the executive branch should be in a position to tap a deep reservoir of disciplined thinking outside the governmental services. There is a saying, attributed at times to Lloyd George and at times to Clemenceau, that the waging of war is too important to be left to the generals. Certainly in a democracy matters of international policy and national security are too important to be left exclusively to the thinking of any one group of civil servants or military specialists. Under the most favorable circumstances the scope for individuality and the development of new ideas and procedures in the specialized services is subject to severe limitations. With the future of the civilized world at stake we need to draw upon all our resources of independent scholarship and research to make sure that we have not overlooked and neglected lines of thought of inestimable value.

The extent to which access to matters genuinely of top secrecy is necessary to informed thinking on problems of international affairs and national security can easily be exaggerated.

There is an urgent and pressing call for independent thinking and inquiry into these matters upon which the fate of mankind depends. We must not be afraid to examine and reexamine the premises and the strategy of our struggle for peace, freedom, and human dignity. We must not be content with but one plan or strategy. We must have alternative plans and strategies available in case of need. We must not only constantly test the soundness and worthiness of our objectives but the effectiveness of the means chosen to achieve those objectives.

We need independent thinking and research not with a view to supporting or rejecting particular policies, but with a view to hewing to the line of truth and letting the chips fall where they may. For this sort of independent thinking and research we need the full-time, not the merely casual, efforts of our best thinkers and researchers. This is a challenge to our universities and research foundations not to enter into politics and propaganda, but to increase and fructify our knowledge.

If we acquire the necessary knowledge, I do not doubt the ability of our people to absorb that knowledge, or the willingness of Congress to utilize that knowledge in the effective fulfilment of its evolving role in international affairs. The public and the Congress have indeed responded with surprising alacrity to such revolutionary ideas as Lend Lease and the European Recovery Program. An informed public opinion probably has a greater appreciation of the significance of the United Nations than, unfortunately, have powerful elements in the executive and legislative branches. But every new day raises again the terrifying question, whether we have out of our accumulated wisdom developed the ideas necessary for our salvation. Congress needs not propaganda or pressure but full information as to the facts and the best thought that our richly endowed democracy can provide.

INTERNATIONAL POLICY AND GOVERNMENTAL STRUCTURE (CHIEFLY EXECUTIVE)

ARTHUR W. MACMAHON

Eaton Professor of Public Administration, Columbia University

(Read April 22, 1948, in the Symposium on the Relation between International Affairs and the Traditional American Scene)

ENMESHED in the mighty issues of harmony between the branches of government in a moving national consensus is the problem of concert within the executive branch itself. This problem spreads with the blurring of the boundaries between national and international policy. Every aspect of life is projected in some way beyond the country's borders. Most civilian agencies touch foreign affairs, sometimes through their own programs, sometimes as active or potential technical advisers in preparing the government's overall position. Meanwhile, the portentous military concern with foreign policy injects novel factors and brings complications of which the organization of intelligence work is a minor though important example. At the same time control of atomic energy illustrates how profoundly ambivalent are the basic civilian controls undertaken by a society situated as is the United States today.

I

The structural problem of executive organization for international policy includes the following phases. First, how much of the stream of relationships and activities should be and can be channelled directly in the State Department? How can the State Department be organized to handle this flow in the face of its mounting volume and the diversities of subject-matter that are involved? Related to the foregoing question is the future of the Foreign Service. Should it be cherished as a unique career group distinct from the departmental civil service? In any case, is it desirable and possible to maintain the ideal of the Foreign Service as the omnibus field organization for all parts of the government? And, if such is the conclusion, can the ideal be pursued without advancing beyond the cautious 1946 revision of the Foreign Service Act in opening the service to specialists? Second, how can foreign policy be unified when dealt with by agencies outside the Department of State? This last aspect includes the management of interdepartmental machinery and blends in the crucial question of the equipment of the Presidency and the ultimate staff relationship of the Department of State and its Secretary to the President.

At the cost of an aside, it is worth noting that the aspect last mentioned—decision above the departmental level—is more than the hardest knot in the present topic; it is perhaps the most pressing subject of inquiry about national administration generally. Common action or at least consistency must be secured within broad segments that embrace several operating departments. Can departments be gathered in groups under a new type of Cabinet officer as has been faintly suggested in the recent treatment of defense? But the need may be wider. Consistency may be required in certain limited but crucial matters that ramify throughout the government. Can the leading agency that touches a matter of universal concern be given a kind of government-wide jurisdiction of limited but decisive nature as a means of imposing unity? So far as such methods are not applicable or fail to absorb the issues, conflicts and choices rise to the level of the Presidency. When this occurs, how can personal congestion, with all of its uncertainties of influence, be avoided without developing the necessary Executive staff in ways that may by-pass and deflate the department primarily concerned?

II

In ascending to the apex of the question it is appropriate to look first within the Department of State for clues to the quantitative and qualitative changes in the content of international policy. Size itself is hardly significant in such a department but rapid increases aggravate many administrative difficulties. In 1790 the department consisted of the Secretary and eight clerks. In 1833 there were 22 and as late as 1870 only 52 employees; in 1909 the personnel numbered 209. By the early twenties an enlarged department was leveling off at six-hundred-odd. The main growth came after 1938 when the departmental personnel numbered 963. They had trebled by 1943. After hos-

tilities ended the number was suddenly swelled to nearly 10,000 by the transfer of information, intelligence, and some property liquidation activities previously conducted by wartime agencies. The first two of these additions were viewed as permanent adjuncts in the conduct of foreign relations. The total has contracted since the transitional peak of 1946. The estimates submitted to Congress early in 1948 for the coming fiscal year contemplated a departmental personnel of 6,450, including over 1,000 for the foreign information program and about half as many in intelligence work.

The foregoing totals were for the departmental service, so-called. In addition, the estimates submitted in 1948 proposed a total Foreign Service of slightly more than 13,000. Of these, only one-tenth were Foreign Service Officers, proper; 165 were to be Foreign Service Reserve Officers—the new category to which specialists can be appointed at any appropriate grade for terms not exceeding four years from any of the departments or from outside the government; nearly 4,000 were Foreign Service "staff officers and employees" (as the Foreign Service Act of 1946 designated the technical and other subordinate personnel and, along with salary increases and other emoluments, thus sought to improve their status and morale). Finally, the total Foreign Service, as projected in 1948, included nearly 6,000 aliens who served in their own countries mainly in maintenance and minor clerical activities.

In point of the amount of money requested in the State Department appropriation act, the estimates submitted to Congress in 1948 were one-third less than the appropriations for the current fiscal year when certain unusual transactions raised the total. The salient fact was that despite this decrease the new estimates (which the Senate largely protected from the House cuts) were five times larger than the 1943 appropriations.[1]

But the significant growth in the State Department, as in the foreign offices of other countries, has been in the range of subject-matter, not in numbers. The elaboration of economic units has been especially meaningful. An impetus was given by the trade agreements program after 1934 which lifted attention from the task of spotting openings for individual export or investment abroad to awareness of wider strategies in dealing governmentally with polygon patterns of world trade. But the main growth of economic staff came after 1939. The massive war operations, of course, took place largely outside the Department of State and the Foreign Service, culminating in the temporary Foreign Economic Administration. The department justified its abnegation on grounds of incongruity with its high responsibility; some outsiders were heard to speak of incapacity. But even while operations were eschewed, economic staff mounted. In June 1947, for example, nearly 600 persons were employed on the staffs of the Under Secretary and the Assistant Secretary for Economic Affairs and of the Assistant Secretary for Transportation and Communication Affairs and in the offices for international trade policy, financial and development policy, and transportation and communications policy. This total exceeded by the ratio of five to three the slightly more than 300 officers and employees in the units that were the old core of the department—the staff of the Assistant Secretary for Political Affairs and the personnel of the four geographic offices for American republic affairs, European affairs, Near Eastern and African affairs, and Far Eastern affairs. The comparative figures do not lose point when it is admitted that numbers do not measure importance as is evident in the fact that about half of the departmental personnel have long been engaged in the routines of communication, records, and management and in controls such as passports and visas.

III

The functional elaboration of the Department of State calls for comment on the problem of unity.

[1] It was said that the reductions made by the House of Representatives would have required the discharge of 780 departmental employees and about 500 in the Foreign Service. (See 80th Congress, 2nd Session. Senate. Hearings before a Subcommittee of the Committee on Appropriations on the Department of State Appropriation Bill for 1949, 2–3, March 23, 1948.) The Senate sought to restore most of these reductions. The conferees set the item for departmental salaries and expenses at $20,000,000, against $21,168,000 in the Budget estimate, $17,168,000 in the bill as it had passed in the House, and $21,101,000 in the Senate amendment. The analogous item for the Foreign Service was fixed in conference at $43,750,000, compared with $44,665,830 in the Budget estimates, $42,500,000 as passed by the House, and $44,665,830 in the Senate amendment. As a result of conference compromises, the total appropriation for the Department of State for the fiscal year beginning July 1, 1948 (including $83,449,862 for "international activities") was $202,693,862, eleven million below the Budget estimate. Over seven million of the ultimate reduction was in the item for international information and cultural activities, which received $27,000,000 in the law as enacted and in addition a contract authorization of one million dollars.

within the department before passing to the diverse external activities that impinge on international policy. The State Department is scolded for confused organization. The 1948 report of the House Appropriations Committee complained of "great duplication of effort" and "a diffusion of activities and responsibilities to the extent that few divisions have a clear-cut definition of their own responsibilities." [2] The report declared that "the present structure is wasteful, costly, and inefficient." The chairman of the subcommittee in charge offered the appropriation bill on the floor of the House with the remark that "the Department appears to contain a conglomeration of various and sundry activities and is to my mind in a deplorable condition from an administrative standpoint." [3] Even the Senate Subcommittee on Appropriations, though pleading in the light of the "critical international situation" for a restoration of the House cuts, reported the committee's "opinion that a reorganization of the Department could effect great savings by bringing together units which presently are separated by arbitrary geographical, political, and commodity divisions," [4] while the Senator in charge of the bill remarked that "probably a majority of the subcommittee feels that the administrative organization of the Department of State in Washington is wasteful and that possibly there is considerable duplication of effort. . . ." [5] Such are samples of the milder type of charges against the State Department. Not a little of such criticism seems the impatience that attends a hasty reading of charts and manuals. Administrative material of this sort, when it does not picture a fictitious simplicity, creates an equally serious illusion of duplication and uncertainty unless it is examined with patience, realism, a knowledge of working habits and the importance of seemingly small differences, and an awareness how far decisions must be an institutional product.

It is true that in recent years the State Department has increasingly been organized on two different bases: area and subject-matter. Nowadays, moreover, the criss-crossing of structural categories is more than the dualism of country divisions and global economic, informational, and other technical staffs. The pattern has come to be triangular. Not only are the geographic offices offset by the subject-matter offices which may properly challenge the claim of the area units to monopolize the designation "political"; in addition, the country divisions and even the regional offices are offset even in traditionally political matters by the rise of the office for United Nations Affairs (as the unit formerly called Special Political Affairs was retitled early in 1948). This office is no longer concerned primarily with devising international structures. It handles substantive matters as a channel to the United States delegations; these in turn become part of the new super-regional "political" staff of the department. It is unnecessary to stress the temporary additional complication of a unit for occupied areas.

The heedless pressure on the Department of State to put its house in order might easily push it into a false simplification, such as resolving the issue between area and subject-matter too heavily on the side of area. In the mistaken name of clarity and responsibility most of the economic personnel and at least the planning units for the foreign information program might be distributed among the four geographic offices. The choice would be one of emphasis, to be sure, for it is assumed by all that a distinctively economic staff would survive at the center of the department. But the same administrative studies in the State Department (such as the report by Otto Nelson in 1946) that have insisted on the necessity of a main choice between the geographic and the subject-matter bases of organization, with the internal subordination of one to the other, have virtually refuted their own hope for a drastic resolution. For they have admitted that international relations are shifting from bilateral to multilateral or world-wide spheres of analysis, action, and agreement.

The advocates of a drastic reintegration around the core of geography soundly assume that a fuller content must be given to diagnosis and action as it applies to any country or region. The word "political," even as redefined, hardly suffices to cover the enriched meaning that is intended. The advocates of the point of view in question urge the need for balanced teams of subject-matter specialists in connection with each area. They assume, moreover, that the leadership of any areal office might as readily belong to an economist, say,

[2] 80th Congress, 2nd Session, House Report 1433, 6, February 27, 1948.

[3] *Congressional Record*, 80th Congress, 2nd Session, daily edition, **94**: 2134, March 1, 1948.

[4] 80th Congress, 2nd Session, Senate Report 1166, 3, April 23, 1948.

[5] *Congressional Record*, 80th Congress, 2nd Session, daily edition, **94**: 4941, April 26, 1948.

as to an officer described as political. The transformation of the old political concept, it is argued, will secure the cordial and full use of all the subject-matter skills which will thus be assured against being disregarded while they will be close to the points of decision and action.

Clearly tradition in the State Department offers formidable obstacles to the virtual revolution in personnel in the country divisions implied by the proposal of which we have been speaking. Many of those who are most strategically placed in the geographic offices are Foreign Service Officers on home detail. The law permits such assignments for periods not longer than four years. Characteristically, at any one time, about one hundred Foreign Service Officers are on duty in the State Department, overwhelmingly in the geographical offices. Hardly any have been assigned to the newer departmental organs concerned with economics and the informational program. In any case, the men at the country desks—whether Foreign Service Officers or permanent departmental political officers—have tended to show qualities of day-to-dayness, of inexpressiveness except about matters of instant detail, and of relative indifference to technical bodies of advice. These working habits have not made for ready use of expertise, especially about matters that are less traditionally part of foreign affairs. The very fact that it is said to be the political officers who offer much of the opposition to the proposed reintegration around geographical cores illustrates how little disposed they are to welcome subject-matter associates, still less to use them on terms of effective equality. In the shadow of the tradition, the general transfer of subject-matter specialists to the geographical divisions may have either of two outcomes: they may be disregarded or their possible contribution may be dissipated in fragmentary current assignments.

This double risk was illustrated in the treatment of the personnel taken over from the wartime Office of Strategic Services. In this case the experience was additionally meaningful because the experts in question were for the most part specialists in various areas. Numbers of the research experts were assigned to the appropriate geographical divisions. The scheme was abandoned after a year's trial, however, and the elements were reassembled in a combined intelligence organization under a special assistant to the Secretary for research and intelligence. The special assistant (whose rank is virtually that of Assistant Secretary) has superintended the offices of Intelligence Research and Intelligence Collection and Dissemination. Their combined personnel stood a little above five hundred in the estimates submitted in 1948. In addition, the immediate staff of the special assistant has administered the State Department's contribution of key personnel to the Central Intelligence Group of the National Intelligence Authority created by the Presidential directive of January 22, 1946. None of such arrangements may be regarded as ideal or final. The relevant point is the fact that within the Department of State the retreat to a relative segregation of intelligence personnel from the geographic offices was at least a suggestive organizational lesson.

In the future, doubtless, important changes will take place in the types of men and minds in the geographical offices along with a broadening concept of what is political. But these changes in personnel and outlook—essential to an effective use of economists and other subject-matter experts in geographical assemblages—will in themselves remove many of the difficulties in the separate existence of subject-matter and areal offices. Meanwhile, as has been said, the center of gravity in international policy tends to pass to issues that are multilateral or global, including economic strategies and the business handled by the United Nations and specialized international bodies.

Basically, the answer to the problem of organization within the State Department does not lie in a drastic choice between area and subject-matter. The solution does not lie in the sort of amalgamations that may starve the end product by suppressing specialities or splintering them unduly. Certainly it will be wholesome to emphasize hard-hitting quality rather than numbers on the economic side of the department, with due allowance for the fact that, although insight, imagination, and energy are of the essence, policy is not something to be conceived and projected without considerable detail and work for many minds. There is no real duplication in the mere fact that some economic offices may have subordinate geographical sections and that the areal offices may contain a few functional specialists. Both elements serve as links to the fuller resources of the department and the government. Yet these necessary elements of mutual linkage are offered as exhibits of bad organization in the current criticism of the department.

Broadly speaking, the development of the State Department in recent years has been on the right track, first, in giving scope to functionalization and, second, in beginning to create integrative means at the center. Action papers must go where there is preponderant concern; all units must serve sometimes as principals, sometimes as consultants. The "staff" relationship is alternate or shifting, not fixed. Much depends upon adequate central mechanisms in achieving clearer responsibility and quicker response along with the necessary admixture of minds in a composite result. There are no administrative nostrums, of course, where judgment and will must be the drivers. But aid may come from a multiple secretariat which, among other duties, seeks to watch and serve inter-divisional relationships and groups at all levels in the department. Without attention top councils run down like unwound clocks. Doubtless, apart from recent circumstances and personalities, it is not desirable to have two undersecretaries of whom one is specifically for economic affairs. The dichotomy of subject-matter and area should not be carried so close to the top; indeed, the arrangement was avowedly temporary. A single general undersecretary (who much of the time must serve at Washington as Acting Secretary of State) might advantageously be supplemented by an undersecretary for administration, whose different and auxiliary role would be obvious.

The framing of international policy is not simple. A factory layout may be judged in terms of physical output but the product of the State Department, in a word, is outlook, not output; and the outlook that becomes the international policy of the United States must be fabricated by viewing matters from various angles and in the light of special bodies of information, both about countries and regions as geographical complexes and also about global processes.

IV

In accepting the necessity of subject-matter proliferation in the State Department, we are mindful of the range of activities in other parts of the government that are tributary to international policy. These activities consist partly of technical assistance that is available and appropriate in preparing the national position on a given subject; partly they are direct operations, small and large.[6]

As to the first type, it is admitted that the State Department, so far as practicable and to a greater extent than at present, must learn to draw on these outside facilities. This outcome will reorient but not remove the need for subject-matter experts in the State Department. Expertness may be of varying degrees of "fineness," as Assistant Secretary Thorp recently remarked to a committee.[7] The task of the State Department economist, standing in the middle zone between the general and the special, is to frame the analysis in terms of foreign policy and to know how and where to tap the full resources of the government. No matter how ideally the State Department comes to depend on and to utilize other agencies, it could not be stripped to country desks. This conclusion need not rest upon the generally conceded excellence of State Department economists as individuals.

In shaping foregn policy, the great departments and agencies that serve clienteles or at least are identified with segments of our domestic economy may be handicapped to some degree in both analysis and expression. It is the peculiar opportunity and responsibility of State Department experts to impose broader frames of reference in taking account of true national self-interest. Here one observes a possible unwitting cause of some of the present attacks on the Department in congressional and other circles. For unless one is attuned to a way of looking at problems in terms of long-run and indirect advan-

[6] A survey of the activities of the national government of the United States, made early in 1948 from the standpoint of the European assistance program, noted: "The existing agencies principally concerned are: State, Treasury, Commerce, National Military Establishment, Agriculture, Interior, Export-Import Bank, Tariff Commission, Federal Reserve Board, Office of Defense Transportation, and the Maritime Commission." *Present Functions and Organization of United States and International Agencies Related to a Program of Foreign Aid and Recovery*, Preliminary Report No. 22 of the House Select Committee on Foreign Aid pursuant to H. Res. 296, 80th Congress, prepared by Wallace Parks, Staff Consultant, March 12, 1948.

[7] 80th Congress, 2nd Session. House of Representatives. Hearings before the Subcommittee of the Committee on Appropriations on the Department of State Appropriation Bill for 1949, 98, January 27, 1948. For illustrations of current complaints from the side of the Commerce Department, see Hearings before the Subcommittee . . . on the Department of Commerce Appropriation Bill for 1949, 196–197, January 14, 1948, and especially 656–672, January 22, 1948.

tages, to think internationally about a problem seems almost disloyal in itself. A minor illustration has been the friction over the transfer of ships to foreign countries, which the State Department has viewed with more favor than either the Maritime Commission or the industry. An apparent consequence was the fact that the 1948 report of the Senate committee on appropriations singled out the State Department's Shipping and Inland Transport Division for chastisement. "The involvement of the Division in domestic affairs this year," it stated, "has been wasteful of Government money and has had disastrous effects upon American shipping." [8] Whatever were the merits of a tangled issue, such reactions to such a problem were a warning, on the one hand, of the limits of relying exclusively upon outside departments as a source of international economic thinking and, on the other hand, of the undesirability of weakening the State Department groups by undue fragmentation of the various economic and other subject-matter staffs.

As to the second phase—operations conducted outside the Department of State—the difficulties are obvious and amount almost to a dilemma. It is not easy to communicate policy by remote control. Such control readily degenerates either by becoming perfunctory or by turning into a vexatiously duplicative review of technical judgments. But the difficulties, however serious, are not conclusive. Precisely because so much of the government is now involved in foreign policy, the solution cannot lie in putting everything together.

A strong case can be made, of course, for putting certain new operations under the auspices of the State Department at least while their relationship to foreign affairs is being established and their main outlines drawn. The international information and educational program has been an example although a modest cultural relations program had been going on in the State Department since 1938. After the cessation of hostilities a novel aspect of foreign affairs was to be given a permanent setting during a period of strain abroad and doubt at home. If the sudden absorption of wartime personnel has embarrassed the State Department, nevertheless the difficulties of carry-over would probably have been greater if the connection with the department responsible for foreign policy had been less immediate. It is interesting to add that in the face of novel operations of a different sort, somewhat similar considerations led the staff of the Bureau of the Budget late in 1947 to favor the initial conduct of the European assistance program by an administration under the auspices of the Department of State. The Budget staff recommended a more organic relationship than the Department's own representatives. At the other end, the House select committee's recommendation of a corporation seemed to aim as much at the injection of a bipartisan and autonomous board of directors as at any administrative conveniences that might come from the corporate form of organization. The Foreign Assistance Act of 1948 adopted the middle course of a single administrator of cabinet-rank with a separate field establishment and a special roving ambassador for purposes of regional liaison.

V

The problems of unity, or of achieving union where unity is impossible, are repeated in the field. The adaptibility of the Foreign Service is challenged fundamentally. In terms of its own ideal, it has developed as the Foreign Service of the United States, not just an agency of the State Department. The law declares that "the officers and employees of the Service shall, under such regulations as the President may prescribe, perform duties and functions in behalf of any Government agency or any other establishment of the Government requiring their services. . . ." As evidence of this omnibus role, a spokesman for the Service stated in 1948 that it was fulfilling demands for information and service from forty-five agencies. He added that "at present the requests that the Foreign Service receives from

[8] 80th Congress, 2nd Session, Senate Report 166, 3, April 23, 1948. For an illuminating interchange between Senator Wherry (espousing the paramount position of the Maritime Commission as "the Government agency officially charged with operational matters in regard to the American merchant marine") and officers of the State Department's unit on shipping, see 80th Congress, 2nd Session. Senate. Hearings before a Subcommittee of the Committee on Appropriations on the Department of State Appropriation Bill for 1949, 221–244, March 29, 1948. The colloquy included the following: Senator: "We became vitally interested. We were told at that time that the State Department had advised the Maritime Commission that they wanted these tankers sold and transferred. Did you have anything to do with formulating that policy?" Officer: "That policy was formulated in the Cabinet, and the Secretary of State, in writing to the Maritime Commission in connection with that, referred to carrying out the policy of the Cabinet, the Cabinet decision." Senator: "It finally landed in the Cabinet. But it landed there because an appeal was made . . .," p. 224.

agencies of the Government other than the State Department for single-time and repetitive reports of an economic and commercial nature now amount to 89 per cent of the total of such reports prepared by the Foreign Service." [9] But reporting and what is called representation, and even the negotiation of master agreements, are not the whole content of foreign activities that include such exigencies as a European assistance program. The long-run issues of the Foreign Service strike in two directions: to its ability to play an omnibus role and to its existence as a career corps distinct from the departmental civil service.

The Foreign Service, vivified as a genuine composite career corps by the Rogers Act of 1924, won something like an exclusive position in 1939. In that year the foreign services of the Commerce and Agriculture Departments, which had developed separately and which had been recognized by law at the close of the decade of the twenties, were merged in the Foreign Service by Presidential action made possible by the reorganization act.[10] This step brought a number of seasoned specialists into full membership in the Foreign Service of the United States but without provision for fresh recruiting of similar specialists. Soon afterward, the exigencies of defense and war created a demand not only for additional officers but also for subject-matter experts and men of action, suited for negotiations and operations as well as for skilled reporting. The demand was met in part by the invention of an Auxiliary to which some four hundred officers were informally recruited at various ages and at levels consonant with their age and experience. But this temporary enlargement of the Foreign Service only partially filled the requirements for the overseas representation of the war agencies and the emergency programs of the regular departments. They sent abroad thousands of their own representatives.

The Auxiliary was non-statutory and temporary. Transitional relief was given by the so-called Manpower Act (Public 488, 79th Congress) which permitted up to 250 persons who had seen war service to be recruited to various upper grades of the Foreign Service at the age of thirty-one or over. Meanwhile, prodded by necessity but still loyal to the ideal of seasoned generalists caught young, the Foreign Service leaders gave attention to a revision of the basic legislation. The outcome was the Foreign Service Act of 1946 (Public 724, 79th Congress). Basically the points of view of the career officers substantially triumphed in a measure which, eluding challenge by the other agencies, passed the House easily and was approved by the Senate almost without consideration.

The Foreign Service Act of 1946 was a complete revision and reenactment of the basic legislation of 1924. It retained the fundamental ideas of the earlier law, however: a career group separate from the general civil service, including the home personnel of the Department of State; with its own system of obligations, pay, privileges, and retirement; administered by its own machinery in the State Department; and recruited mainly by initial appointment (technically by the President with Senatorial confirmation) after examination and probationary service to the lowest of a ladder-like series of classes and grades. In such a scheme appointment is to a class, not a particular position, and an officer undertakes to accept any assignment throughout the world that from time to time is given to him. The 1946 act reduced the classes to six, each with a number of salary levels, ranging from $3,300 at the bottom to $13,500 as basic compensation for the top grade in Class I. To these the act added the class of "career minister" at $13,500.

Above all of these are the positions of "chiefs of mission," grouped in four classes according to countries with basic salaries ranging from $15,000 to $25,000. Barely one-fifth of the present chiefs of mission have been appointed on a strictly political basis. Freshness in the career Service, proper, is sought in the new law by limiting the period an officer can remain in any class and by requiring his retirement if he is not promoted by a selection board within this maximum, period.

[9] 80th Congress, 2nd Session. House of Representatives. Hearings before a Subcommittee of the Committee on Appropriations on the Department of State Appropriation Bill for 1949, 286, January 30, 1948.

[10] One does not hear complaints from the Commerce and Agriculture Departments about the loss of their regular foreign services; the grievances, where they exist, are on other grounds and relate mainly (in the case of the Department of Commerce, at least) to participation in the shaping of policy and the handling of technical programs. But the Treasury Department now resists absorption of its overseas personnel. "We anticipate," said a Foreign Service spokesman at hearings in 1948, "that, although our negotiations thus far have not been successful, we will be permitted to reopen them." He could not give the reasons for the Treasury's reluctance. 80th Congress, 2nd Session. House of Representatives. Hearings before a Subcommittee of the Committee on Appropriations on the Department of State Appropriation Bill for 1949, 316, January 30, 1948.

The act facilitates the objective by liberalizing the retirement privileges.

Some flexibility in recruitment is provided by the fact that, among the seven salary levels prescribed under the lowest class, the young officer starts at the rate "which the Secretary shall, taking into consideration his age, qualifications, and experience, determine to be appropriate for him to receive." Under exceptional conditions, moreover, appointments may be made directly to one of the five upper classes, following examination, provided the candidate "has rendered at least four years of actual service immediately prior to appointment in a position of responsibility in the Service or in the Department or both, except that, if he has reached the age of 31 years, the requirements as to service may be reduced to three years."

A more important step toward flexibility taken by the 1946 act was provision for a Reserve. This is organized in classes and grades and at salaries that correspond to those in the regular Service. Reserve officers may be appointed without formal examination for non-consecutive terms of not more than four years in any class appropriate to their "age, qualifications, and experience." The act provides two sources for such Reserve Officers: first, persons "not in the employ of the Government whom the Board of the Foreign Service shall deem to have outstanding qualifications of a specialized character" and, second, "persons regularly employed in any Government agency subject, in the case of a Government agency other than the Department of State, to the consent of the head of the agency concerned." Reserve Officers may be commissioned diplomatic or consular officers by Presidential appointment and Senatorial confirmation as in the case of Foreign Service Officers of career.

But the main reliance of the 1946 act in seeking to assure adequate technical specialization and practical assistance was the attempt to improve the status of the members of the Foreign Service who are neither career nor Reserve Officers nor alien employees. On this intermediate group the law conferred the new appellation "staff officers and employees." They are arranged in twenty-two classes, rising from a minimum compensation of $720 a year to a possible basic annual salary of $10,000. By informal usage, those in the top nine classes are called "officers"; the rest are "employees." The idea behind the word "staff" in the 1946 act bears some resemblance to the Naval distinction between "staff" and "line" officers. Under the Foreign Service Act, staff officers are not wholly blocked in the hope of achieving modest posts of self-contained command. The law provides that "on the recommendation of the Secretary, the President may, by and with the advice and consent of the Senate, commission a staff officer or employee as consul" and the "Secretary may commission a staff officer or employee as vice consul." But in general it is assumed that new staff officers will be recruited between the ages of twenty-five and forty-six on the basis of some special technical competence.

In its cautious response to the question of specialization within the Foreign Service, the plan behind the 1946 act depends heavily on circulation of personnel, including turns of service in the State Department and other departments and agencies, as well as international agencies and other governments, and also assignments under many types of conditions in an enlarged training program. The law now requires that every Foreign Service Officer must be assigned for duty in the continental United States not less than a total of three years during his first fifteen years of service. On the side of training and domestic contacts, the appropriations for the Foreign Service have not yet permitted its expansion to the stage that would permit enough officers to be detached at any one time for the realization of the program as originally conceived. The forecast submitted with the estimates in 1948 mentioned, among other features, the assignment of 192 officers to colleges and universities and to the State Department's Foreign Service Institute for language training, area specialization, and intensive training in economics and public administration. It was contemplated that 45 officers would be sent to departments like Agriculture, Commerce, and Labor for specialized training. In addition, 25 officers on home leave were to be sent on planned tours of industrial plants, commercial firms, agricultural experiment stations, and conferences of various types. These were only some of the contacts with life in the United States proposed as part of a hoped-for new emphasis upon recurrent training and exposure as an essential of career building.

The Foreign Service Act of 1946 has made important concessions to functional claims. It remains to be seen, however, whether either the permanent staff personnel or the temporary Reserve Officers will have the prestige within the

Service suited to functional needs abroad. Such contingencies strike deeply in tradition and morale and are answered as much at the circumference as at the center. Thus far the use of Reserve Officers has been slight. Barely one hundred were employed at the end of 1947 and provision for only 165 was requested in the new estimates although the preamble of the 1946 act gave as one of its main objectives "to provide for the temporary appointment or assignment to the Foreign Service of representative and outstanding citizens of the United States possessing special skills and abilities."

Immediately, at least, practical progress seems to lie in projecting the liberalizing tendencies hinted at in the 1946 legislation, rather than in an amalgamation of the Foreign Service in the general civil service. Such a merger has many meanings, not always made clear in the discussions. The House Committee on Expenditures in the Executive Departments, in a report on State Department organization in 1947, deplored the separation of the departmental and Foreign Service and recommended that "these two systems should be unified so as to eliminate the inefficiency, waste, and jealousies which now exist."[11] The assistant secretary for administration had told the subcommittee that unification was his fondest objective. But the lightness with which the committee conceived the proposed change may be judged from its remark that "certain amendments to existing laws, including the Foreign Service Act of 1946, may be necessary to attain the desired goal." Of course, a considerable further combination of the central managerial organs of the department and the Foreign Service is possible without abandoning the scheme of a career group who assume the obligation of accepting assignments anywhere in the world. A thoroughgoing merger of personnel that was confined to the State Department might actually aggravate the problem of relationships to the subject-matter departments. The even more drastic step of amalgamating the Foreign Service in the general civil service of the United States is hardly desirable, apart from its practicality, until further progress has been made in the development and flexible use of high administrative personnel. These considerations seem to support the conclusion that the early need is a further and bolder loosening and diversification of the Foreign Service and a fuller two-way circulation of personnel that will involve all the departments as well as the talents of the country.

It is likely, of course, that in the future, increasingly, the problem of direct relationship from country to country will be changed by the existence of international organizations of a specialized functional nature. They will be bridges. This very tendency involves technical agencies of the national government in relationships to the international organs in their subject-matter fields. The problem then becomes double: first, the choice of representatives (including adequate balance of over-all points of view and hard technical knowledge); second, the continuous flow of instructions to these representatives. The domestic agencies become in turn agents within the United States for the carrying out of policies and measures that are requested by the international bodies.

VI

We are thus led back to the question of a larger union at home in the formulation and flow of international policy. Three main alternatives are suggested by the several trends of events. All assume the immanence of the Presidency in international policy as well as the necessity for close working relations with congressional leaders. First are the formalized inter-agency committees or councils, variously chaired and staffed according to dominant subject-matter but prevailingly centered in the State Department. They seek to absorb and resolve the issues in diverse arenas of interdepartmental discussion. Second, the State Department may be given a mandate to act as guide and arbiter with wide directive or at least veto power in any matter of foreign policy. Third, the President himself may be the focus. But here the realities lie largely in the sources of his advice and the nature of the staff available to and used by him, including the position of the State Department in this final staff relationship.

Inter-agency committees are an obvious and prevalent device. They are properly suspect. But the cynicism invited by the word committee may dismiss too lightly the convenience of regularity in contacts that recognize the importance of exchange, discussion, and consensus as the very stuff of decision. Three elements must be at hand in due combination: power, knowledge, and time; their assembly is an endlessly special problem.

At the beginning of 1948 it was possible to name about thirty-five formally recognized inter-agency

[11] 80th Congress 1st Session, House Report 1072, 5, July 24, 1947.

bodies whose concern with international affairs was signalized by the participation of the Department of State. They were of very uneven importance. The State Department held the chair in twenty cases; Commerce in five; Agriculture and the Army in two each. The Central Intelligence Agency, the Export-Import Bank, and the Tariff Commission each presided over one committee, while the National Security Resources Board had its own civilian chairman. The President himself was chairman of the National Security Council established by the defense unification act. Of thirty-six listed subcommittees, the State Department presided in twenty-two; Commerce in six; Agriculture, Treasury, and the Federal Security Agency in two apiece, and the Labor Department and the Air Force each in one. These superficial facts are mentioned to illustrate the extent to which the committee device recognizes the technical leadership of subject-matter departments. Shifts of emphasis in the work of committees may lead to changes in the chairmanship. Thus in the case of the Air Coordinating Committee, which helps in our linkage to the International Civil Aviation Organization, the State Department presided during the period of development. In 1948 the leadership of the committee was transferred to the Commerce Department in view of the presence there of the main civilian aeronautical agencies.

The secretariats of the inter-agency committees customarily follow the chairmanships. In the State Department a degree of coordination among the committees that it serves is attempted in some cases by locating the recording secretaryship in the multiple secretariat to which reference has already been made, while the executive role is carried by the appropriate subject-matter office. This device might well be noted as a pattern in any future developments of the President's staff in relation to interdepartmental machinery. Interlocking is furthered in some departments by designating the same officer, with different alternates, as the representative on a number of committees. The Commerce Department, notably, has pursued this flexible way of binding its participation in a number of committees through the person of the head of the Office of International Trade.

In the committees where military affairs touch foreign policy, the degree of leadership attributed to the State Department has varied. It has presided in the main body and the eleven sub-groups of the relatively effective State-Army-Navy-Air Force Coordinating Committee as well as in the Advisory Committee on Occupied Areas Affairs, the Executive Committee on the Regulation of Armaments, and the National Munitions Control Board. It has participated under the President with other heads of departments in the National Security Council established by the 1947 defense unification act "to advise the President" and in that connection "to assess and appraise the objectives, commitments, and risks . . . in relation to our actual and potential military power" and "to consider policies on matters of common interest to the departments." The National Security Resources Board (embracing the Secretaries of Treasury, Agriculture, Commerce, and Labor as well as of State and of the National Military Establishment) has its own separately chosen chairman in performing its statutory duty "to advise the President on the coordination of military, industrial, and civilian mobilization, including policies concerning industrial and civilian mobilization and maximum utilization of the nation's manpower in the event of war." The State Department has been a mere member in the Intelligence Advisory Committee established in 1947 by a directive of the National Security Council. The committee has been headed by the director of the Central Intelligence Agency and the special assistant to the Secretary in charge of this matter in the State Department serves on a level with the representatives of the three defense departments, the Joint Chiefs of Staff, and the Atomic Energy Commission.

On the economic and social side, the broad field assigned to the Executive Committee on Economic Foreign Policy and its subcommittees on its launching in 1944 has been contracted by the appearance of inter-agency committees for special functions, especially where an international body is created. The National Advisory Council on International Monetary and Financial Problems under Treasury leadership was established by Congress in the action by which this country adhered to the international bank and stabilization fund. Other examples of recently created subject-matter groupages have been the Air Coordinating Committee, the Inter-Agency Committee on Food and Agriculture Organization, and the Interdepartmental Committee on International Social Policy. Their range is illustrated in the activity of the last-mentioned committee in helping to prepare and clear instructions to the United States representative on the United Nations Commission on Human Rights.

Clearly, flexibility and alertness are desirable in bringing about fruitfully fluent relationships and in dissolving them when conditions change. Statutory establishment is undesirable in any case. When committees exist, they must be scrupulously respected by all concerned, for such scrupulous respect is essential to their vitality, as Harry Hawkins showed in his brilliant handling for the State Dapartment of the interdepartmental bodies under the trade agreements program. But in general, without disparaging the usefulness of some prime, steady arrangements, it appears that the combinations appropriate to effective counsel in changing situations are best when evoked freshly in the light of the problem at hand. The need of an organizing focus leads to the consideration of the equipment of the Presidency.

VII

At the summit the risk is a shortcircuiting of the departmental system. Congressional enactments sometimes contribute to his tendency. Instead of giving the Department of State power of coordinative intervention—a relationship doubtless easier for judicious Presidents to enforce in practice than to formulate in general law—the statutory movement has actually gone in the opposite direction. An illustration was the Foreign Assistance Act of 1948. The preparation for this measure, it may be said, was genuinely, even superbly, collaborative; on the executive side the extensive mobilization of information and canvass of points of view were a striking illustration of the concern of many agencies in foreign policy and their contributions to it. But the consideration of plans was not untouched by certain deep institutional rivalries amid many honest perplexities of choice. In presenting the compromise bill to the Senate, Senator Vandenberg said of the language that makes the President an arbiter: "This is a paraphrase of the formula which has worked so well in the Atomic Energy Act involving somewhat similar mixed functions."[12] The clause provides that "whenever the Secretary of State believes any action, proposed action, or failure to act on the part of the Administrator is inconsistent with the foreign policy objectives of the United States, he shall consult with the Administrator and, if differences of view are not adjusted by consultation, the matter shall be referred to the President for final decision." The House of Representatives added and the conferees accepted a clause that repeated the foregoing language in reverse, permitting the Administrator to challenge and to carry to the President "any action, proposed action, or failure to act on the part of the Secretary of State. . . ."

Looking beyond immediate necessities and personalities for a guiding principle about executive structure, we must ask whether there is not a warning and probably a weakness in tendencies which—though sound in recognizing the mingling of domestic and international considerations and the involvement of so many parts of the government in foreign affairs—reduce the Department of State to the level of other departments even in matters of international policy. Such tendencies may have one of two results. One outcome leaves the President without a settled staff for foreign policy; the condition is then amorphous, personal, unpredictably eclectic. The other outcome ends in the development of a staff for foreign policy independent of and superior to the Department of State. We may doubt whether either outcome marks the path to firmness and consistency in our international policy. Executive staff there must be—modest, many-handed, facilitative, alert in eliciting and tending flexible inter-agency contacts and agreements—but the sound course will respect the total role of the Department of State through its Secretary as the main staff for international policy decisions that must be made on the level of the Presidency.

[12] *Congressional Record*, 80th Congress, 2nd Session, daily edition, **94**: 1984, March 1, 1948.

FOREIGN ECONOMIC RELATIONS OF THE UNITED STATES AND THEIR IMPACT UPON THE DOMESTIC ECONOMY

A Review of Long Term Trends

SIMON KUZNETS

Professor of Economics, University of Pennsylvania

(Read April 22, 1948, in the Symposium on the Relation between International Affairs and the Traditional American Scene)

1. SETTING OF THE PROBLEM

A GIVEN country's view of the rest of the world reveals a picture of variety and complexity. In this rest of the world, nations differ widely with respect to size and composition, ways of managing the economy and attitudes to other national units. This diversity is, in turn, the result of differences in the supply of natural resources, in historical heritage, in the pattern of social institutions governing economic life. And the picture never stands still; nations wax and wane in economic power, and apply this power in changing ways to other members of the world community.

The impact of the rest of the world upon the domestic economy of a given country may be viewed as the sum total of three types of change. The first is change in the given country as compared with the rest of the world. If a country grows more or less rapidly than others, if the volume or composition of its production exhibits trends different from those of the world at large, this in itself would change the economic relations between it and other countries—even if these latter stand still. The second is change in other countries; even if we unrealistically assume perfect stability of economic life in the given country, change in the rest of the world would force changes in the relations between the given country and the sum of all others. Finally, there may be shifts in the technological and institutional means for economic contacts among different countries: other conditions being equal, changes in techniques of transportation or communication or in institutional devices by which economic contacts among nations are made will spell changes in a country's international economic relations.

Still by way of introduction, one must recognize the various forms that economic relations of a given country with the rest of the world assume. On the narrow definition of "economic," such relations are confined to movements of commodities and services across national boundaries, and to the complex network of claims and obligations built up in connection with this trans-boundary movement of goods. These are the flows recorded in what economists call the international balance of payments—on both short and long term accounts. But to confine the relations of a given economy with the rest of the world to just these flows of goods and correlative claims and obligations is to miss some important channels of interaction. We should, in the first instance, add the movement of men, immigrants and emigrants—not tourists (whose expenditures are covered in the international balance of payments). These movements of men, in addition to those of goods and capital, comprise the peaceful type of economic relations—peaceful not in the sense that they could not be employed for warlike purposes (as they have been by some countries in recent years), but because they *can* be used for peaceful intercourse; and in fact have so been used until the very recent two or three decades.

Wars have not been usually treated as economic acts. They were ordinarily viewed by economists as aberrations that might temporarily modify the working of a country's economy, but that are otherwise too transient and "irrational" to merit analysis as integral parts of economic processes. However one might sympathize with such a position, one cannot exclude wars from consideration of the recent impact of the rest of the world upon a country's domestic economy. War conflicts also involve movement of men, commodities, services, and capital—but not by the type of consent that is expressed in a free market. The warring nations export men, commodities, and capital not because their enemies (the importers) want them, but because the exporters hope to achieve thereby a forceful change in the international situation favorable to themselves. It may seem fanciful to talk of war as export, and involuntary import, of men, commodities, and obligations. But it is because wars involve tremendous expenditures of

economic resources and result in a changed network of claims that they are so important in any consideration of *economic* relations of a given country with the rest of the world. If wars were fought by oratorical contests involving few economic resources, resulting in purely symbolic gains and defeats (such as occur in the Olympic games), there would be much less reason, if any, for economists to be concerned with them.

Our attention is confined to the *material* flows across boundaries, with little discussion of spiritual flows—in spite of their importance. But even with this limitation, the picture is complex. The separate and combined effects of changes within the country, changes in the rest of the world, and changes in the techniques of international contact must be traced both in the various peaceful types of flow across boundaries (migration, foreign trade, other current transactions, capital flows) and the warlike types. Clearly, the analysis below can be little more than a sketchy outline, raising many questions to which no definite answers can be given.

2. PRE-WORLD-WAR I TRENDS IN MIGRATION, TRADE, AND CAPITAL

A long look back carries with it the danger of oversimplifying the past and creating a nostalgia for its simplicity as contrasted with the vexing complexity of the present. Nevertheless, in dealing with the recent impact of international conditions upon the domestic economy of the United States, we must take a look at the long term development of this country, and at the pattern of economic relations with the rest of the world that accompanied such development. It is only against the background of such a past that one can see clearly the recent trends and raise questions as to their implications.

The development of the United States, like that of all countries that grew as economic units during the last one and a half to two centuries, can be described as industrialization, i.e., extension in application of technical and social arts based upon empirical science. Beginning with a stage in which the country was predominantly agricultural, the extension of more advanced techniques served both to raise productivity in agriculture and to develop new industries (industries here being understood broadly) which permitted a better utilization of agricultural products and the employment in other pursuits of the growing population and of the labor force released from agriculture. Because the nature of human wants is such that, with the growing supply of goods per capita, an increasingly smaller proportion of consumer needs is satisfied by agricultural products, the growing product per capita meant a decreasing proportion in the national economy of agriculture and extractive industries in general; and a correspondingly higher proportion of non-agricultural activities—manufacturing, construction, and transportation in the earlier phases; service industries (trade, professional and personal services of various description, and government) in the later phases. Industrialization can be defined formally as a sustained increase in the proportion of a country's economy devoted to pursuits other than agriculture, accompanied by a marked increase in total production and associated with the spread of techniques based upon empirical science. All three elements are important in the process; but the spread of modern technology, physical and social, was the base; growth in production its most important result; and the diversion away from agriculture a corollary consequence, even though superficially most conspicuous.

The economic growth of the United States can thus be defined on the quantitative side as a sustained increase in total output; and on the structural side, as the extension of scientific technology resulting in diversification away from agriculture, the emergence of a host of new industries of urban character, rapid growth of productivity in all industries including agriculture, and the urbanization of the country. Such a diversified and ramified process would obviously affect also economic relations with the rest of the world; and we may consider briefly what these effects were on the movements of men, commodities, and capital across boundaries; and on the more warlike type of contact, either in aggression or in defense.

(*a*) The effect of economic growth upon voluntary emigration and immigration would be different according as the impact of industrialization is upon an old and settled country or upon a young one, with a large supply of free land. In either case, industrialization would result, at least in the early phases, in cutting death rates without an immediate decline in birth rates thus producing what demographers call the "swarming" of population; and also in dislocating agriculture wherever it is already settled, by the introduction of new techniques in the settled areas or by the extension of agriculture to new areas where higher productivity would mean disastrous competition to the old areas. Hence in both old and new countries the

early phases of industrialization are accompanied by considerable population pressure, with dislocation in the old agricultural areas—both factors producing a strong flow of population to the cities and the new industries, a movement that feeds the rapid process of urbanization. But while these internal trends were fairly common in character, if not equal in magnitude, in both old and new countries, their effects on external migration were different. In the old countries, these movements resulted in emigration. At least a portion of the dislocated population moved out of the country rather than undergo the trials and tribulations of proletarization in their native cities. In the new countries, the effect was immigration. Not only was the available free land sufficient for internal migration of population dislocated from the settled areas, but the demands of the growing economy called for more population than natural increase alone could provide.

The unusual record of free international migration during the century preceding World War I, and the major role played by the United States as the main recipient of these voluntary migration flows, are well known.[1] They were not completely free; immigration from Asia was restricted in the 1880's. But with this significant exception, the flow was limited only by economic and technical factors both of which tended to become obstacles of diminishing importance. There was a happy conjunction by which, as one older European country after another entered the orbit of industrialization, at least part of its displaced population found room in the New World; and the New World, United States in particular, found use for the labor force thus made available.

The role of free immigration in both the economic development of this country and in setting the pattern of economic relations of the United States with the rest of the world has never been fully analysed. The literature in the field, characteristically classified under the heading "immigration problem," with emphasis on *problem*, would appeal to impartial analysts as largely a tissue of prejudiced opinions and garbled statistics. True, in the short view, immigration was a problem; and the long view seldom finds adequate representation in the vociferous discussion that day-to-day questions arouse. I am not concerned here with controversial questions as to whether immigration has inhibited reproduction of the native population, or as to presumptive differences in quality among various immigrant stocks. But for the purposes of the present discussion it should be emphasized that immigration did provide an important force in the rapid economic growth of this country; that it constituted outlets in the solution of problems of economic growth in European countries, clearly reflected in the shift of immigration sources from one area to another following the shifting course of industrialization in Europe; and that it made for a climate of international relations, economic and other, that goes far to explain both the relatively peaceful character of the century and the advantageous position which the United States occupied in the world. Free immigration meant free enterprise and political democracy in their most conspicuous manifestation; and its cessation is an important element in the retrogression of these institutions in recent decades. The very diversity of national origins in the immigration to this country, a diversity that was much less characteristic of the immigration to other new countries (such as parts of the British empire or the Latin American republics) meant an exemplification of one world in the United States which gave this country much greater weight in the affairs of the world than either its economic or political magnitude, vis-a-vis other great powers, warranted.

(*b*) We turn now to the effects of economic growth and industrialization upon the flow of commodities and services across boundaries. One obvious effect was the marked increase in total output and the rapid improvement in means of transportation and communication which led to much larger movement of goods across boundaries than would have been feasible in earlier times. Another effect is also clear, although less obvious. As a country enters the phase of industrialization and advances industrially more rapidly than the rest of the world, the composition of the goods that move across its boundaries changes. Whereas

[1] A statistical account of nineteenth and twentieth century migrations is presented in *International migrations*, edited by Walter F. Willcox, I and II, National Bureau of Economic Research, publications Nos. 14 and 18, N. Y., 1929 and 1931. For the United States proper, a brief summary and analysis are given in Thompson, W. S. and Whelpton, G. K., *Population trends in the United States*, Chap. IX, N. Y., McGraw-Hill, 1933. A useful estimate of net immigration into the United States is also provided in Rossiter, W. S., *Increase of population in the United States, 1910–1920*, Appendix C, Census Monograph I, Government Printing Office, Washington 1922. Data for recent years can easily be found in the annual issues of *Statistical Abstract of the United States*.

in its pre-industrial phase it exports raw materials and imports industrial products, with its industrial advance its imports gradually shift to raw materials and its exports to manufactured articles. Similarly, in pre-industrial or early phases of industrialization, the balance of services (as distinct from commodities), mainly for international transportation, communication, insurance, and investment are against the country; as it becomes industrialized, the balance of services might begin to move more in its favor. Last but not least, a country that enters the phase of industrialization later than others ordinarily tries to protect its young and growing industries against the competition of older and more industrialized countries by a system of tariffs—which it may or may not retain upon reaching a high state of industrialization.

All these trends, with some modifications, characterized the development of the United States.[2] Its foreign trade and other items in its current transactions grew prodigiously in absolute volume as the country grew and as its production expanded; foreign trade shifted from exports chiefly of raw materials and raw foodstuffs to exports dominated by manufactures, accompanied by an opposite shift in the structure of imports. The role of the country as the champion of protection is well known. The distinctive element lay in the sphere of services. After the Civil War, this country did not regain its important position in oceanic transportation; nor has it attempted, until after World War I, to play much of a part in other international service industries. The main reason seems to lie in the absorption of all resources in rapid extension over the continent and in the growth of the domestic economy—an effort that left little room for challenging England or some of England's later competitors as international carrier, factor, or investor.

Some consequences of the gearing of transboundary flow of commodities and services to the needs of rapid growth of the domestic economy in this country deserve emphasis. The United States played a major part in the international movement of men during the century preceding World War I. It played a much smaller part in the international movement of commodities and services. Data are easily available for commodity trade alone, for the period since 1876.[3] But for this limited canvass, some important conclusions emerge. The first is that the share of the United States in total world trade is much less than its share in the world's total production. Thus, for the period extending roughly from the middle of the 1920's to the middle of the 1930's, the share of the United States in total world production was close to 25 per cent; the share in world trade was only somewhat over 10 per cent. In the case of manufactured products, the discrepancy is even greater. Our share in world manufactures in the inter-war period was roughly 40 per cent; our share in world trade in manufactures, between 10 and 12 per cent. This means that the rest of the world contributed a proportionately greater share of its output to world trade as a whole than did the United States. This fact is easy to explain. Total production in the rest of the world, particularly of manufactures, was in the hands of countries smaller than the United States. The ratio of across-the-boundary trade to domestic production varies, in general, inversely with the size of the country; a high ratio in small countries (like Belgium, Netherlands, Switzerland, Sweden, etc.) and a low ratio in countries with large land masses and huge population and production machines. Once the United States expanded from the strip of land along the Atlantic coast to a vast continental country, its proportionate rate of participation, i.e., the proportion of its total output directly engaged in foreign trade was bound to be low.

The second statistical conclusion is somewhat unexpected. The share of the United States in world trade has been quite steady through the decades preceding World War I, hovering at slightly above 10 per cent. Even after World War I, the increase in that share to 14 per cent in 1926–1929, accounted for by the pressure upon the United States to contribute to world reconstruction, disappears during the depression; and the pre-World-War II years are marked by percentages again not much above 10. Such stability was maintained in spite of the fact that during the decades since 1870 the United States was growing

[2] The basic summary data on the volume of foreign trade can be found in the annual issues of the *Statistical Abstract of the United States*. The pioneer and only basic study of the balance of payments of this country for the long term period prior to World War I is that by Bullock, C. J., Williams, J. H., and Tucker, R. S., The balance of trade of the United States, *Rev. Econ. Statistics*, July 1919.

[3] The data are taken largely from *Industralization and foreign trade*, League of Nations, 1945. The estimate of the share of the United States in total world production is approximate, and is based upon the estimates by Colin Clark (see his *Conditions of economic progress*, London, Macmillan, 1940).

more rapidly than the rest of the world. This suggests that the stable share was the resultant of two trends that offset each other: the growth of the share of the United States in total world production and a decline in the share of foreign trade to total production in the United States, a decline that was much more marked than the trend in the ratio of world trade to world production.

Both of the preceding conclusions seem important in understanding the foreign trade relations of the United States with the rest of the world. This country relied less than the rest of the world on foreign trade, strategic as the latter may have been to it; and its relative contribution to world's foreign trade remained stable through the decades back to the 1870's. Whatever increasing independence from foreign countries this country was establishing, and whatever limitation upon international economic cooperation *via* trade this country's tariff policies were imposing, these were offset by its very rapid growth. One might claim that in a sense the world, as a partner in international trade, was not a loser because the United States chose to force the growth of its domestic economy by protective policy, as over against an alternative policy of less protection and of possibly less rapid growth of its domestic economy. This is a challengeable thesis. Yet there is some ground for arguing that a free trade policy would have kept the United States more predominantly agricultural, growing at a much slower rate; and that this slower growth, even if combined with our greater participation in international trade, might not have yielded larger foreign trade volumes than the combination, actually realized, of more rapid economic growth with a lower rate of participation in world trade.

(*c*) Like most countries that were in the nineteenth century in the early phase of industrialization, the United States enjoyed the assistance of foreign credits in assembling the resources needed for the development of its industries. The consistent net debtorship position of the United States on international accounts prior to World War I is well known.[4] Less widely recognized is the fact that neither the gross international indebtedness of this country nor the net (i.e., after deducting U. S. claims upon foreign countries) has been large, either in comparison with the total pool of international capital investments; or in comparison with the total capital in this country owned by it residents, even if we limit capital to reproducible wealth alone (i.e., exclude land and other non-reproducible natural resources). Prior to World War I our *gross* foreign obligations amounted, at their peak, to some $7 billion, and, in so far as crude estimates of wealth permit a comparison, were never more than one tenth of reproducible wealth (or one twentieth of total wealth); *net* foreign obligations never exceeded $4 billion, and accounted for a correspondingly lower proportion of domestic wealth. Moreover, while the statistics of total international capital investment are none too adequate, it appears that placements in this country never amounted to much more than one tenth of world placements by creditor countries.

Since a rapidly developing country provides such splendid opportunities for capital investments, it may at first appear surprising that investment funds did not flow into the United States in much greater volume during the century preceding World War I. But it must be remembered that prior to the recent era of direct investments (i.e., when foreign investment takes the form of direct purchase and ownership of plants, land, and other real assets) credits in a foreign country could be accumulated only by importing commodities or services without a *quid pro quo* in commodities or services received. This meant that a borrower country could build up a foreign debt only by a consistently unfavorable balance in commodity trade, or in the flow of services, or in both. Prior to the 1870's the United States did have a fairly consistent unfavorable trade balance (i.e., an excess of imports over exports). But even this excess was relatively small, and the possession of a merchant marine capable of active participation in international trade served to keep down the unfavorable balance on the service account. During this period also, European countries imported a great deal of capital, and provided competition to the United States as an international borrower. After the Civil War the vigorous growth of production in the United States, combined with the protective system, resulted in a consistently favorable balance of commodity trade, and under these conditions accumulation of a debt balance on the international account could come only from either the service account or from direct investments. The former is naturally a limited source of international indebtedness because of

[4] A full treatment of the position of the United States on international capital accounts back to early nineteenth century is provided in Lewis, C., *America's stake in international investments*, Washington, Brookings Institution, 1938.

the small ratio of international services to the total product of any country of fair size; and the latter was inhibited by the distance between the would-be direct investor (in the European creditor countries) and the United States, as well as by the fact that funds available for direct investment at that time were only a limited proportion of all funds available for placement in the international investment market.

Whatever the reasons, and the suggestions advanced above merely offer a tentative explanation, the fact was that the United States played a limited role in the network of international capital investments; and that, as in the case of foreign trade, its share of participation in it was fairly low relative to its size. In summarizing this and other aspects of peaceful flows across boundaries as they appear in the long view, one may state it, perhaps too simply, as follows: The United States told the rest of the world, "we shall take your men and women freely and let them participate in the rapid economic growth that we expect and look for; we shall export as freely as we can, and import subject to restrictions designed to force the pace of our industrial development; and while we shall borrow from those of you who can lend, we do not need too much credit—for it is in the process of rapid expansion that we shall find, within our country, the means needed for successful industrialization."

3. PRE-WORLD-WAR I TRENDS IN EXPANSION AND CONFLICT

A rapidly growing country displays a tendency towards expansion of territory under its sovereignty, and of economic penetration into other areas, where, without acquiring sovereignty, it tries to assure favorable conditions for economic intercourse. Such expansionist tendencies are a natural consequence of economic growth so long as that process is sparked by aggressive individuals; and so long as economic production cannot occur in vacuum but must depend upon the use of land and other natural resources. The extension of new methods of production, whether or not based upon empirical science, is a difficult and risky task—in either old or new countries. Such a task is likely to be assumed, with the tacit or explicit consent of society, by individuals or groups willing and capable of running the risks and tackling the difficulties involved. These individuals and groups are not likely to forbear from taking advantage of facilities provided by the wider territory and the greater natural resources than can be acquired by their own state; or from forcing openings in other states where the possible advantages of trading or investment are obvious.

In its rapid growth during the nineteenth century, the United States provided a clear example of such tendencies towards territorial expansion at home and economic penetration abroad. While the record is familiar, it can do no harm to recall that the nineteenth-century history of this country is punctuated at frequent intervals by sizable additions of territory under its sovereignty. The Louisiana Purchase of 1803, the Florida purchase of 1819, confirmation of the claim to Oregon in 1846, the annexation of Texas and the cessions from Mexico (and the Gadsden purchase) in 1848, the purchase of Alaska in 1869, the annexations resulting from the Spanish war towards the end of the century, and, finally, the acquisition of the Panama Canal Zone at the beginning of our century constitute a record of rapid external expansion. And to this list, comprising only changes involving other sovereign states, should be added the continuous encroachments on the aboriginal rights of the Indian tribes.

While the record with reference to economic penetration, sometimes backed by force, into other countries is not as striking as the above, it still shows that this country was scarcely free from this tendency. Our initiative in opening Japan is a familiar fact, as is the economic penetration into Mexico, and particularly into the Central American republics. Like all countries that, in the process of their industrialization, come to rely upon raw materials from other states, the United States was anxious to assure the possibility of ordinary commercial intercourse, unhindered by pre-industrial patterns of political and social institutions in the underdeveloped countries.

That vigorous extension of territory under its sovereignty and its penetration into other areas in order to assure itself a minimum of the necessary economic traffic were vital elements in the long term growth of this country is a fact that need not be labored. This phase of growth parallels that for others, whether in England, the original habitat of industrial capitalism, in later followers such as Germany or Japan, or in the USSR, the most recent example of industrialization, this time under authoritarian auspices. But the distinctive characteristics of the American example of this aggressive aspect of economic growth were its accomplishment without major armed conflicts, and thus with little outlay of resources. Much of the ex-

tension of the area was with the consent, reluctant or eager, of the powers involved; and such as involved armed conflict never called for exertions that impeded significantly economic efforts toward peaceful internal growth. The same was true of economic penetration abroad. With respect to this relatively peaceful type of external expansion, the record of the United States is fairly similar to that of Russia in its movement eastwards.

The basic conjuncture of circumstances that permitted this relatively peaceful process of external expansion was the absence of powerful neighboring state units and the favorable or relatively indifferent attitude of those powers that could have impeded the process or made it a relatively costly one (particularly England). This also explains another characteristic peculiar to the long term development of this country. In spite of the gains of extensive expansion, the United States was marked by the freedom of its economy from either the tradition or burden of militarism—the usual concomitant of such expansion in other countries. Unlike England who had to maintain its fleet to insure its lines of communications; unlike Germany who inherited a strong military group from its pre-industrial phase and used it for aggressive expansion across its boundaries; unlike Russia who maintained a large military establishment partly for internal security, but largely with an eye to its European and Minor Asiatic boundaries; unlike Japan who retained the military cast of its pre-industrial society, and used it both to free itself from Western penetration and for its own conquests, the United States neither inherited the military cast from its feudal past (of which it had little), nor saw much need for it as a tool of growth or security. Except during the Civil War decade, military expenditures of this country were in minor fractions of one per cent of total national income—a record practically unparalleled among other major countries within the orbit of industrial capitalism in the nineteenth century.

One must also not overlook the fact that the infrequency of major conflicts (there were in fact only two during the span of more than a century, of which by far the more important was the Civil War) meant freedom not only from direct economic burdens but also from distortions in the structure of the economy. In countries organized along lines of free enterprise and political democracy, even successful wars, so long as they call for a major economic effort, involve changes that are serious impediments to continued peaceful growth. Freedom from such impediments was an important element in the unusual record of economic growth of this country.

The trends in external expansion and international security just noted serve to explain, at least as permissive factors, the trends already indicated in the across-the-boundaries flows of men, goods, and capital. A large volume of immigration was made possible by the prevailing and prospective security of this country on the one hand, and by at least a benevolent or neutral attitude of countries of origin, on the other. The whole structure of foreign trade, as well as its growth in volume, cannot be explained without relating it to the rapid growth of the country's domestic production in turn related to its expansion of territory and the turbulent growth of its population. The relative lack of dependence upon foreign capital was due to internal economic strength on the one hand, and the lack of any purely *political* inducements for would-be creditor countries on the other. This interrelation between the peaceful currents across the boundaries, and the developments in the realm of international relations with respect to balance of power and the possibility of conflict, must be clearly kept in mind. Cognizance of it is indispensable in analyzing the economic relations of the United States with the rest of the world, for the longer period briefly sketched above; and even more for understanding the major changes in these relations that occurred since World War I.

4. POST-WORLD-WAR I TRENDS IN MIGRATION, TRADE, AND CAPITAL INVESTMENT

In considering trends in the economic relations of the United States with the rest of the world since World War I, we must shift our emphasis in a significant way. The foregoing skeleton outline of trends during the century preceding 1914 emphasized primarily the growth of this country, as the major factor that made for changes in international relations, so that we could, justifiably, pay little attention to shifts in the rest of the world except as a permissive factor. In treating the recent three to four decades, the emphasis must be on changes in the international scene. It is the latter that catch our eye; and it is they that largely determine changes in the economic relations of the United States with the rest of the world. From a permissive factor, trends in the rest of the world become a compelling factor. This does not mean that trends originating within

the United States proper can safely be neglected. But it does mean that they recede in importance in comparison with changes in the international scene.

These changes are a sadly familiar story needing little elaboration. Out of some thirty odd years that extend from 1914 through 1948, major wars of unparalleled intensity account for fully a decade, little less than one third. The period is also marked by accelerated industrialization of Japan, with disturbing consequences in the Far East, and of Russia, with disturbing effects in Europe. Perhaps most important is the fact that, contrasted with the expansion of the system of free enterprise and political democracy in the nineteenth century—exemplified by almost all countries reached by the industrial revolution in that century—there is a definite advance of authoritarian types of social and economic organization—sweeping out of Russia, Italy, and Germany, affecting Japan, and, in recent years, penetrating into other countries, mostly those underdeveloped economically. Contrasted with this, there is the apparent failure of the nineteenth-century type of industrialization in many major areas of the world—among which China is most notable. Finally there is progressive and striking disorganization of the whole network of economic relations among nations, originally based upon a relatively peaceful movement of men, commodities, and capital. And this list omits the distortions of economic and social institutions *within* the countries still marked by free enterprise and political democracy.

It is against these marked changes in the international scene that recent trends in the economic relations of the United States with the rest of the world must be viewed. These trends are clearly apparent and can be summarized under four headings: (*a*) the reduction and virtual cessation of immigration; (*b*) the reduction in relative size and the drastic change in the character of foreign trade; (*c*) the shift from debtor to creditor position on international account, and the distortion of the whole system of international capital relations by political types of flow; (*d*) the increase in the share of military expenditures in particular and of government activities at large in the structure of the national product.

(*a*) Even with continuing peaceful relations in the world, immigration to the United States would probably have declined, certainly proportionately to this country's population and perhaps even in absolute volume. The proportion of *net* immigration to total population was at peak in the 1850's and, on the whole, declined to World War I (for the decade 1850–1860 it was close to 10 per cent of total population; for that of 1880–1890, it was 7.6 per cent; for the decade 1900–1910, it was 6.6 per cent). As our population grew and as the economic need for the type of labor provided by immigration declined, the net volume of immigration *retained* was bound to form a decreasing percentage of the country's total population. Continuation of this trend would in time have brought a decline also in the absolute volume of net immigration.

It may also be reasonably assumed that immigration would have been legally restricted, even had the world remained in peace. One important element in the pressure for restriction would have been the increased proportion of gross to net immigration, i.e., the tendency clearly manifest since the 1890's towards a gross inflow of people greatly in excess of what the country apparently could absorb. Unlike the earlier decades when, out of one hundred immigrants coming in not more than twenty returned, in the decade or two before World War I the proportion returning was running close to 40 per cent. Persistence of this tendency would have accelerated restriction of immigration, since such a large volume of temporary labor created social and cultural difficulties calling for some remedy. And one should add that restriction might have been the only readily available remedy, since any regulation of immigrants once *within* our boundaries would have run counter to all the traditions of the country's economic and social system.

This, necessarily conjectural, argument is strongly suggested by the historical record of the decades immediately preceding World War I. In so far as immigration was likely to decline and to be restricted, one might argue that the drastic reduction and restriction that followed World War I was but an acceleration of already existing trends, rather than a completely new pattern imposed by the changed international scene. Yet acceleration is too mild a term. Clearly the break in actual immigration trends was more drastic by far than would have been expected had the world remained at peace. A trend that might have emerged gradually over half a century or longer was compressed into a brief span of little more than fifteen or twenty years; and assumed a form that it might never have assumed, except for the major wars, the dislocations in their wake, and the

other drastic changes in the international scene already indicated.

The effects of these upon the immigration flows are quite apparent. The First World War brought about a drastic reduction in immigration, and provided this country with the experience of managing its economy without a continuous inflow of people. Even though during the war quinquennium net immigration amounted to over half a million, it was a far cry from the 3.8 million of the preceding quinquennium. During the decade of the 1920's immigration was regulated by the National Origins Act, a measure that reflected the exacerbation of nationalist feelings during World War I and a fear of the effects of participation in world conflicts. But during this decade there was still a substantial flow of some 3 million of net immigration, a third of the rate in the last quinquennium prior to 1914. The drastic restriction came in the 1930's during the major depression undoubtedly associated with the dislocations brought about by World War I. During this decade, total net immigration dwindled to slightly over 200,000. Clearly, the fear of wars; the emergence of authoritarian powers capable of controlling and distorting immigration streams in ways completely unknown during the nineteenth and early twentieth centuries; the experience with unemployment and the drive for security—all brought about a drastic reversal in policy within a relatively brief time span. It is highly unlikely that free immigration will be resumed, although as one looks towards the future a question may reasonably be raised as to the wisdom of complete abandonment of a policy of substantial immigration.

(*b*) On the surface, recent trends in the movement of goods across the boundaries of the United States are a continuation of trends manifest at least since the 1870's—of the continuous decline in the proportion of imports, and of the somewhat less consistent decline in the proportion of exports, both taken in comparison with the relevant total of domestic output. But in either case, there was a marked acceleration of this trend—particularly in imports, the ratio of exports being temporarily sustained by pressure upon this country for active assistance during both World Wars and during the period of reconstruction immediately following these major conflicts. During the decades from 1894–1903 to 1919–1928 the ratio of our imports to total domestic output ranged from 5 to 6 per cent. During 1929–1938 that ratio dropped to 3.8 per cent. The ratio of exports to domestic output, even disregarding the war decades, was well over 6 per cent during the decades preceding the great depression, dropping to 3.8 per cent during 1929–1938.[5] Furthermore, there were marked shifts and disturbances in the territorial spread of the international movement of goods and in the degree to which it was controlled by peacetime purposes related to economic progress. The relatively free movement of goods that characterized the decades prior to World War I, qualified, to be sure, by tariff policies, gave place, even in the peaceful years, to a movement necessarily inhibited by the existence of authoritarian states with inclination to control the flow of goods across their boundaries; and it was affected by the needs of either repairing the damages of past wars or preparing for future ones. Mere totals of the volume of international movements of goods or ratios of the latter to domestic output of the respective national economies do not reveal such shifts in the locus and composition of across-the-boundary flows.

While an analysis of the flows of goods across the boundaries, either into or out of this country, which would attempt to distinguish war-dominated sectors from others, cannot be undertaken here, two conclusions seem to be beyond reasonable doubt. First, as far as the purely peaceful flows are concerned, similar in character and economic significance to those that prevailed before World War I, the restriction in relative volume—relative to domestic production of this country—has been even more marked than the over-all ratios of foreign trade to total output show. In that sense, there was a catastrophic acceleration of the trend not dissimilar to that in immigration. Second, in the total flow of goods across boundaries, the war-dominated sectors increased strikingly; and partly correlated with this increase was an increase in what might be called international-policy-dominated sectors. The conspicuous example of the former are imports and exports of war material during major conflicts, or in preparation for them. A conspicuous example of the latter are lend-lease in various forms, including the recent decisions under the Marshall plan—dealing

[5] These ratios are calculated by using official figures on exports and imports, the latter inclusive of duty; and our estimates of gross national product (inclusive of imports). Estimates of gross national product are taken from the author's *National product since 1869*, N. Y., National Bureau of Economic Research, 1946. Both the numerators and the denominators are in current prices.

with the export side of our international transactions account; and what used to be called, during the war, "preclusive buying," and in recent years may be designated as "subsidy buying," on the import side of the account.

During a period in which one third of the years are marked by major armed conflicts, perhaps fully another third are years of immediate postwar recovery, and some of the remaining one third are tainted by war, the filling up of the channels of international movement of goods with conflict-dominated flows, to the exclusion or drastic restriction of peacetype normal flows, is inevitable. There are definite limits, at any given time, to the share of domestic output than *can* become engaged in across the boundary trade, without revolutionary changes in the economic and social institutions of the country. Given such limits and given retention of the institutions that set such limits, the pressure of war or politically dominated flows would necessarily result in the displacement and restriction of peacetype flows.

(*c*) World War I marked the transition of the United States from an international debtor to an international creditor. Whereas in mid-1914, this country owed the rest of the world somewhat over $3½ billion (net), its net *credit* at the end of 1919 was over $12½ billion; and even excluding government debts of some $9½ billion, there was a credit balance on the private international account of some $3 billion. In the 1920's, net assets on private account increased by another $5 billion, to yield, in 1929, a net credit balance of $8 billion. During the same decade the credit balance on government account also increased, from $9½ to somewhat over $11½ billion. During the 1930's the net credit balances had been substantially reduced, partly because of the default of some obligations but largely because of an influx of funds into the United States from other countries. In 1938 total foreign holdings, excluding intergovernment war debts, were somewhat over $12 billion (on long and short term); but obligations were $9.2 billion, leaving a net balance of only $2.8 billion—a marked reduction from the net balance on private account of $8 billion in 1929. During the war our position changed further in the direction of reducing net credit on international account. Counting only non-government items, the position at the end of 1944 was marked by a gross claim of some $11 billion, a gross obligation of somewhat over $12 billion, and a net *debit* balance of about $1 billion. In the very recent years there has been a sizable export of capital abroad; so that at present, the United States is again a substantial creditor on the international account.[6]

These gyrations in the net balance of international indebtedness suggest three important conclusions. First, regardless of any temporary adverse balances, the United States after World War I has never ceased to be in fact a creditor country. Since it probably would have attained this position even had the world remained at peace after 1914, the demands of war and of postwar reconstruction only hastened this shift, accelerated rather than caused the trend. But as in the case of immigration and foreign trade, the acceleration was again very rapid and contributed to the failure of our institutions to adapt themselves quickly and effectively.

Second, because of deterioration in the position of most of the important creditor countries (particularly England, Germany, and France), the role of the United States as an international creditor was much more dominant than it would have been were the world to have remained at peace. This meant that the chief world creditor was a nation whose foreign transactions were but a minor element in its domestic economy. The severe fluctuations in the flow of credits from this country during the two decades between the two wars, may have been of some consequence to this country; but they were of even more drastic consequence to at least some debtor countries in the rest of the world. These characteristics of the recent decades cannot be interpreted as a continuation or acceleration of longer term trends that anteceded World War I: the foreign credit transactions of the United States had no such strategic importance in the network of international debts and claims during the nineteenth or early twentieth century.

The third recent aspect of our international accounts is also in the nature of a new and uncomfortable consequence of changed world conditions. Beginning in the 1930's, this country exercised a strong pull upon outside funds, as a refuge

[6] For accounts of recent changes in the country's international indebtedness see Lewis, C., *Debtor and creditor countries: 1938, 1944,* Washington. Brookings Institution, 1945. An important analysis of the interwar period is contained in *The United States in the world economy,* United States Department of Commerce, Bureau of Foreign and Domestic Commerce, Economic Series No. 23, Washington 1943. A recent discussion is also Buchanan, N. S., and Lutz, F. A., *Rebuilding the world economy,* N. Y., Twentieth Century Fund, 1947.

from possible monetary and political disturbances elsewhere. While such flows of "hot" money were probably not unusual in pre-modern periods of economic history, they were relatively unimportant in the Western World during the century between the end of the Napoleonic wars and World War I. Their re-emergence in the 1930's was a clear consequence of serious economic and political maladjustments. And after our entry into the recent war, there were other inflows of funds here, governed not by peacetype economic needs but by political factors; balances were accumulated by some neutral countries because their products were needed by us during the war, and because the demands of war did not permit us to pay with goods of our own. In short, there was "politicization" of the flows of capital, similar to the militarization and "politicization" of the flows of goods, whether of commodities in foreign trade or of services on other real transaction accounts.

5. POST-WORLD-WAR I TRENDS IN EXPANSION AND CONFLICT

If the recent third of a century was marked by drastic changes in the trends characterizing transboundary movements of the peaceful type, the breaks in the patterns of non-peaceful type of contact were even more marked. There was an end to the expansion of area under United States sovereignty, an end to the trend that was so important in determining the character of the country's economic growth in the nineteenth century. Of course, some unkind critic might point to the example of our occupation of former-enemy territory (e.g., Japan) as evidence of continued drive towards expansion. But even if by misuse of words these actions could be described as territorial expansion, there is a vast difference between this type of preventive measure which, on the whole, is a net burden on our economy, and the absorption of territory that characterized our nineteenth-century history and that provided the basis for unparalleled domestic growth.

Just as there was a reversal in at least the character of our territorial expansion, and upon a fairer interpretation, complete cessation of such expansion, so there was a reversal in the long standing policy of non-participation in major world conflicts. That this change can be explained quite simply by the absence of major world conflicts during the century elapsing between the Napoleonic wars and World War I, does not deprive the reversal of significance. Granted that the basic premise for such participation is the occurrence of world conflicts, and that, given the organization of the world into nations and the very huge economic size of the United States, it would be hard to think of a major world conflict in which this country might fail to participate. Nevertheless, such participation is a novel element in our history, and brings consequences some of which are not clearly appreciated, in spite of our apparent familiarity with wars in recent years.

In thinking of the economic consequences of such participation the first consideration is usually of the direct outlays involved. In these terms, the impact of World War I on this country was moderate. For 1917 through 1919, the three years in which such outlays were large enough to be included in the account, total war output in 1914 prices amounted to some $19 billion. For the same three years the nonwar output of our economy amounted to $108 billion.[7] We thus expended the equivalent of about one fifth of our nonwar output—not much more than our gross capital accumulation in many normal years. The same comparison for World War II (possible for totals in current prices alone) reveals the much greater effort in the recent conflict. For 1942–1946, total war expenditures amounted to $316 billion; during the same five years, nonwar output (gross of depreciation) amounted to $661 billion. Thus our direct war outlays were equivalent to 50 per cent of total nonwar output for these five years; and even this ratio should be raised because 1946, a year of proportionately low war outlays, was marked by a price inflation that disproportionately increased its weight in the total of five years. Thus, the recent conflict with its longer period of participation and its mobilization of a much larger relative share of total output for war expenditure has a much greater impact on our domestic economy than did World War I.

But the direct cost of participation in a war, especially to a country which, like ours, did not become a battlefield, is only part of the war's impact upon its domestic economy. A more important aspect is the opportunity cost. Even without direct participation in armed conflict, a country's economy responds to the pressures of war by a reorientation of its resources to new uses and by either complete cessation or drastic restriction of efforts directed towards normal, peacetype

[7] The estimates for World War I are from Kuznets, S., *National product in wartime*, N. Y., National Bureau of Economic Research, 1945; for World War II, from National Income, *Supplement to survey of current business*, U. S. Department of Commerce, Washington, July 1947.

purposes. In the years prior to our entry in World War I, from 1914 through 1917, there was already a distortion of our domestic economy by pressure to supply the allied countries; a restriction of certain peacetype activities, e.g., residential construction; and inflationary price rises that were scarcely conducive to the consistent growth of our domestic economy viewed as a servant of long term, peacetime needs. Whatever might be put on the other side of the scale, in the way of forced growth of some techniques and acceleration in the use of some resources during wartime, intensive economic participation in a war, whether or not accompanied by direct fighting, carries heavy net costs with it. It represents an interruption in that steady concern of the economy with the needs of consumers that is the vital basis for sustained economic growth. The technical accomplishments of a military production effort have dubious transference value to peacetime; the opportunity costs represented by the diversion of economic effort to transient needs but dimly related to those of peacetime, are, by contrast, exceedingly heavy.

It is difficult to estimate this indirect cost of war. To use World War I as an example, how much was lost in the sense that it interrupted the normal immigration flows and reduced our population growth accordingly? How much did it cost us by accelerating expansion of capacity in some war needed industries, such as bituminous coal and steel, capacity unnecessary in post war years? How much loss was involved in reducing residential construction and wearing down the industrial structure of the country by limiting replacement? How much did the war cost us by imposing an unhealthy price structure and inhibiting a vigorous search by the community of producers for goods wanted by consumers, a search made unnecessary by the inflationary situation? Such questions cannot be answered adequately in quantitative terms. Yet one cannot avoid the impression that these opportunity costs were heavy. Is it unreasonable to argue that the drastic decline in the rate of growth of our economy, apparent when one contrasts the percentage increase in real national product during the years from 1914 through 1938, with the record for periods extending back to the Civil War, is in large part due to World War I and the dislocation it brought about in its wake? Is it unreasonable to suggest that, with a world at relative peace after 1914, our average rate of growth—as measured by total national product, would not have dropped from 20 per cent per quinquennium to 9.3 per cent; or the rate of increase in per capita output from 9.7 per cent to 2.6 per cent?[8] The opportunity cost involved in the reduction of these rates of growth by 3 or 4 per cent is vast indeed.

In inhibiting the growth of our domestic economy as a servant of peacetime needs, World War II is, by all signs, likely to constitute an even greater opportunity cost than did World War I. The form which this cost will assume may be different from that during the two decades from 1919 to 1939. In these earlier decades, the cost took the form of lower *total* productivity than otherwise might have been attained, and the loss emerged as one associated largely with the depression of the 1930's. We *may* escape that particular consequence because, in contrast to post-World-War I days, we are not making such an abrupt turn from a war to a peacetime economy. If the outlay of real resources on non-peacetype and lend-lease uses is kept at the proportions predicated in present plans, we may avoid a severe depression of the 1930's model and in that sense will not pay for World War II by a reduction in total output. But, from the point of view of economic development envisaged as growth in service of peacetime needs, there is little to choose between reduction of productivity that assumes the shape of an economic depression and a reduction of peacetype productivity accompanied by maintenance of high levels of total output *via* increase of outlays on military and defense purposes. Indeed, one might well argue that *if* we have to choose between these two evil consequences of major wars —dislocation and depression in a peaceful world as over against dislocation and high levels of production bolstered by military output in a warlike world—the choice is not necessarily in favor of the latter.

6. TRENDS IN TRANSPORTATION AND COMMUNICATION

No explicit consideration has been given so far to the third group of factors affecting the economic relations of a country with the rest of the world, namely the technical and institutional means of contact. Clearly, the technology of transportation and communication played an important part in determining the flows across the boundaries—

[8] The comparison is between decades prior to and after 1914, and uses the estimates in Kuznets, S., *National product since 1869*, N. Y., National Bureau of Economic Research, 1946.

whether in a process of peaceful exchange or in one of forced invasion and defense. Without the striking changes that occurred since the early nineteenth century in the means of transportation, in international communication techniques, and in those institutional devices by which nations further peaceful intercourse or wage war, such huge peaceful flows and such vast and exhaustive conflicts as were recently experienced would have been impossible.

At first this technological development appears as a neutral factor facilitating equally the growth of peaceful and of warlike contacts. But the techniques of transportation and communication may develop, in some historical periods, in the direction of peaceful relations among nations and favor, in other periods, warlike relations. Since I am not familiar with any analysis of technological growth viewed from this standpoint, the present discussion of the developments during the last century can serve to yield only plausible impressions, of necessity broad and perhaps superficial.

We begin with transportation of men and goods across space. The first impression is that the technical progress associated with the origin and spread of the modern industrial system is at least as conspicuous in the field of transportation as anywhere else in the economy. Railroads, automobiles, and the application of internal combustion to air, represent crucial phases in this process, resulting in a revolution in transport greater perhaps than in any other field of production, either extractive or elaborative.

Second, this revolution in transportation made it possible to penetrate parts of the world hitherto untouched by the industrial system, and removed, or greatly limited, the blank areas on the world map. Before the advent of the railways, the vast continent of Africa was impinged upon by the Western powers only along its coasts and along some of its internal waterways; and the growth to industrial maturity of such continental powers as the United States, Russia, and Australia was dependent upon the development of the railway. The matter is of importance in that conflicts of interest among major national units are, perhaps, more likely in a situation in which their boundaries or those of their satellites are contiguous, than in a world of isolated segments separated by areas that cannot easily be traversed by existing technical means.

Third, in so far as the technical revolution in transportation was possibly of greater magnitude than that in other types of production, it facilitated greater intercourse among nations—first and foremost a transportation problem. Facilitating such intercourse meant making it easier not only to augment the peaceful flows across boundaries, but also the warlike type of contact. Furthermore, in so far as the technical revolution in transportation called for heavy capital investment—a heavier investment per unit of service than of reproducible capital needed for extractive or manufacturing industries, it meant an increased economic investment in war far in excess of that needed in times when transport was primitive. When examining the apportionment of war expenditure between means of transportation (ships, planes, motorized equipment, etc.) and munitions proper, one cannot fail being impressed by the overwhelming dominance of the former; and one may reasonably conjecture that these proportions were not characteristic of at least land warfare of pre-industrial times.

Fourth, it may be argued that some recent technological changes in transport contributed more to the increase in the technical power of war contacts than of peaceful contacts. This argument is based upon a broad distinction between transport for peacetype uses as based upon assurance of proper facilities at either end of a bilateral contact, and transport for wartype uses which requires assurance of facilities at one end only. If men or goods are transported in peaceful migration and trade, transport facilities must be available with equal ease at the point of origin and at the point of destination; if men and goods are transported for purposes of war attack, there must be facilities at the point of origin both for dispatch and for return, but there need not be equal facilities at the point of delivery or attack. The differences with respect to the factor just noted between rail, motor, and air transport are quite marked. The first can be used for warlike purposes merely as a way of mobilizing resources for attack within the attacking country —and so also can motor and air transport. But the latter two, particularly air, can be used for attack within the enemy country without any facilities for it in the latter, a feat unattainable by railroads unless the enemy country obligingly provides the facilities and attainable by motorized transport only over much shorter distances.

This argument in technical and military logistics should not be pressed too far, particularly by a mere economist; after all, even in wars, it is not enough to hit and run. Yet if such hitting and

running are done on a wide scale, the consequences to the issue of an armed conflict may be decisive. And surely the old saying that an army travels on its stomach is obsolete. In present wars it travels on motorized wheels, and increasingly so on wings; and while the stomach remains important, the means of providing for it are much less of a problem than those of supplying the wheels and the wings. One may, therefore, say that recent technological changes in means of communication did serve to aggravate the economic burden of warfare; and that by their technical nature, they served to increase the scope of war contacts much more than that of peacetype flows. The trend in this direction, as far as one can see, continues into the future, and it is irrelevant for the present argument whether these technical changes in transport are in themselves a consequence of greater attention to warfare than to the problems of peace.

Communication is essentially transportation of information and ideas, and in this field there has been an equally impressive expansion of technical means of contact among nations. Here, too, the more recent developments in the field, such as radio, as distinct from the earlier (telephone, telegraph, mail, etc.), are of a type in which it is possible for one link in the contact to invade the other, without establishing full facilities at the far end. Here, too, invasion, as distinct from peaceful intercourse, has perhaps been facilitated by technical and institutional growth.

But in the field of communication the purely technical possibility of contact among nations is less important; more important is the existence or absence of common ground for the spread of information or ideas, of a peaceful or warlike type. Economic relations among nations, whether migration, trade, borrowing and lending, or warfare, assume some contact with respect to information and ideas governing the particular relation. It is not the technical means of communication but its content that determines its effect upon the volume and composition of economic relations. And the outstanding development with respect to the latter, as revealed by a broad look at the past century, has been the ever increasing number of nations drawn into the network of the modern industrial system and a corresponding spread of information and ideas that assign greater importance to *economic*, as over against religious and other sets of values. The main trend in communication was an acceptance by a rapidly growing proportion of the world of the values of a secular industrial economy with a consequent rapid extension of corollary institutions to facilitate economic intercourse among nations. The earlier isolation among national units, with their different historical and cultural heritages and with their completely different sets of values governing society, was rapidly giving way to at least a partial acceptance of values characteristic of our type of industrial society in which economic attainment is placed on a high, if not a completely dominant, level.

The result of this spread of secular economic civilization has been to facilitate peaceful flows of men and goods across boundaries. But it has also provided a basis for conflict which would not have existed without the common acceptance of economic values. To illustrate in terms of today—the ideological conflict between the capitalist and the communist nations is one based on acceptance by both of the importance of economic performance, and of almost complete disregard by both of performance on the scale of religious, aesthetic, or other non-economic values. With this common base which permits the capitalist society to appeal to some groups in communist society and vice versa, the conflict may be of bitterness unimagined between e.g. an industrial nation of today and a society like that of China or India prior to the modern centuries. It is because we are more of one world, in that our judgments of social order are based upon similar if not identical criteria, that the opportunity exists for deep-seated conflict, backed by advanced economic means.

Thus an economist viewing the broadly changing scene in the field of international communication is impressed not so much by the growth in the technical means as by the trend in the spread of common economic information, ideas, and sets of values. He is impressed by the fact that, as the industrial system spreads, it inevitably forces societies and nations drawn into its orbit to adhere to a similar set of values, with a great emphasis on economic attainment; that conflicts among national units are just as likely to emerge on this common basis as on the basis of different systems of values; and that, when they do emerge, they are likely to involve much greater economic outlays and thus constitute much graver economic problems than those among nations that fail to agree on the importance of purely economic achievements.

7. CONCLUDING COMMENTS

This paper presents a brief account of past trends in the economic relations of the United States with the rest of the world and points out the contrast in these trends between the century

prior to World War I and the ensuing period. These contrasts with respect to migration of men, the relative volume of peacetype trade in commodities and services, the position of the United States in the international capital accounts and the character of its capital flows, the shift from peaceful territorial expansion to participation in major conflicts, and, finally, the ways in which trends in the technological means of transportation and in the ideological conflicts as substance of communication have affected this country, are all readily apparent. The impacts of these changes in our economic relations with the rest of the world upon our domestic economy is equally apparent; at best, they mean slower growth in the future and an increased diversion of our resources to services other than welfare of domestic consumers; at worst, they mean a complete distortion of our economic and social system, and loss of most of our social and other achievements.

Throughout our discussion two omissions are apparent. One omission is common to any analysis of the past which adheres to facts, to the accomplished in disregard of the choices available at the time. In such an account an attempt to explain what has happened may easily produce an impression of simplicity and inevitability, i.e., that no alternative choices existed and that what has happened *had* to happen. This creates the illusory contrast between the simple past and the complex present; and worse, if the impression is accepted, it leads easily to an extrapolation of trends into the future in an aura of hopeless inevitability. There is no room here for a thorough discussion of the theory of historical causation, or for an analysis of the proper bases of historical extrapolation. One can only note that, in describing and accounting for the past, no attention was paid to the alternatives of the time, and thus no indication given that at least some of these trends were a matter of choice, even though such choices were, as they always are, within a narrow range set by the heritage of the past. Any extrapolation of these trends, therefore, is also a matter of choice; and it would be foolhardy to identify the occurrence of an event with its inevitability, or the indications of a trend with its unavoidability.

The question of choices in history, and hence in economic policy, whether domestic or foreign, takes the form, most overtly, of alternative theories; and this leads to the second major omission of the paper. Our discussion, even if viewed merely as an account of the past, rather than an analysis of the past as of choices among existing alternatives, is largely limited to trends in material flows; and it thus overlooks the impact of the view of the world and of the relation of the given country to it. Such a view guides and determines long range policy, either with respect to trans-national economic relations or to the growth of the domestic economy proper. A given country is member of the world concert of nations not only in the sense that it trades with the others, exchanges people or obligations with them, or engages in conflicts, overt or hidden. It is also a member in that it either emulates other nations or reacts negatively to them in scrutinizing their experience and policies with a view to either adaption or rejection in application to its own domestic economy.

This non-material aspect of economic relations between a given country and the rest of the world cannot be studied quantitatively. Yet one can see clearly that a nation, such as the United States in the nineteenth century, which, in spite of size and rapid progress, was not yet the economic leader of the world, would look to the experience and policies of Great Britain as the economic leader of the day, and be greatly affected by the theory of economic growth and progress which that leader advances or claims to exemplify. The United States, in this case a follower country, would not necessarily accept that theory without revisions that would suit the peculiar experiences and position of its own economy. But it may react to the theory in a spirit of modified emulation; and evolve a view of the world, and of its own relation to it, which would provide the ideological basis for its own growth and for the assumption of easy consent of the rest of the world to such undisturbed growth.

In the nineteenth and early twentieth century, the United States did appear to have a clear theory of economic growth consonant with a peaceful world. This theory represented a modification of that evolved in Great Britain. It had with the latter the common element of stressing free adaptation of technological progress, by individual enterprise and within a framework of political democracy, to the production problems of an economy. Another common element was the insistence upon free accessibility to scarce resources, without limitations by institutions that would not recognize the importance of private property and of entrepreneurs as the key elements in application of technical progress to economic problems. It differed from the English theory in being protectionist, in not accepting England's plan of serving as the workshop for the whole world with its

corollary advocacy of fully free policy in transnational movement of commodities and resources. And the United States assumed that the rest of the world will give easy consent to such theory since the world would be a clear gainer from the rapid economic development that would occur under such conditions; gainer from the opportunities for free migration, from an expanded volume of foreign trade, from relatively free investment opportunities for any surplus funds that it might generate.

This was a theory of an important follower, rather than a leader, country, in a period in which there was wide acceptance of the theory as depicting a way of economic growth accessible to all would-be follower countries. With only some, albeit eventually important modifications, it was entertained by other countries that entered the orbit of industrialization during the century: Germany, Japan, and Tsarist Russia, to mention only the larger units.

After World War I the United States emerged as the economic leader of the world, and since that time changes in the international scene came thick and fast. Clearly, the theory entertained by this country, when it was in position of a fast growing follower in nineteenth century conditions and beliefs, would scarcely provide guidance when the country emerged to economic leadership; and when, particularly in recent years, the belief in feasibility of economic growth accompanied by free enterprise and political democracy has been shattered so gravely. Even disregarding the latter change, it is not clear that this country offered to the rest of the world a viable theory of economic growth, compatible with its own role as economic leader. No clear evidence emerged out of our domestic and foreign economic policies during the 1920's and the 1930's to serve as basis of formulating such a theory—to serve as guide both to ourselves and to the rest of the world towards a peaceful and economically progressive future.

The position of economic leadership involves responsibilities for formulating such a theory, since the organization of the world in competing nation-states forces other units to follow the leader —either by imitation or by opposition. Great Britain offered a theory which, if accepted, would assure some economic growth to the rest of the world and would at the same time serve to prolong, if not perpetuate, the industrial dominance of Great Britain. This theory was accepted, with the crucial exception that tariff barriers were erected and industrialization forced in countries that eventually brought about the loss of economic leadership by Great Britain. Some groping towards a theory compatible with economic leadership of this country, and preservation of a peaceful world within which the United States would be allowed to retain the major results of her economic advance, has been made in recent years. The partial abandonment of the tariff policy and the drive towards freer trade are one element in it. The consideration of economic investments in other countries is another element. But no consistent theory has emerged so far, and, in its absence, there seems to be too exclusive a reliance on negative elements. Too much emphasis is placed on preservation of already established economic superiority, and too little consideration of the elements that would be viewed as positive by the rest of the world. Yet a viable theory must combine the prolongation, if not necessarily perpetuation of a country-leader's own economic position, with assurance of adequate economic progress in the rest of the world, with the likelihood if not certainty that the economically leading country, in the very nature of prolonging her advanced position, will contribute adequately to advance in the rest of the world.

It is hardly surprising that such a theory has not yet been evolved. Recent changes have been numerous and rapid, and in such times there is always a marked lag in adaptation of our thinking, of our social and economic *mores*. The emergence of radically different principles of economic and social organization to serve as auspices under which economic growth in the rest of the world could be attained is, to say the least, a complication conspicuously absent during the nineteenth century. It is too early to say whether the sweep of industrialization accompanied by free enterprise and political democracy has already exhausted the areas of the world which, by their historical heritage and natural conditions, are potential participants; or whether there is still room for further extension of that type of growth. At any rate, careful study of the problem is vital as a basis for an adequate theory that would combine a sound view of potentialities of economic growth both in our country and in the rest of the world—growth in the service of satisfying ultimate human wants, not of power politics of competing nation-states. The existence or absence of such theory would, in the long run, mean much in determining the future impact of international relations on our domestic economy.

THE INFLUENCE OF FOREIGN DEVELOPMENTS ON THE AMERICAN ECONOMY

FRIEDRICH A. LUTZ

Professor of Economics, Princeton University

(Read April 22, 1948, in the Symposium on the Relation between International Affairs and the Traditional American Scene)

THE title of my paper covers a vast area, too vast to be explored in detail in half an hour. I shall have to concentrate on the vital issues or, at least, on what appear to me to be the vital issues.

Foreign events can influence the American economy through two channels: (1) Foreign ideologies concerning the "right" or "proper" organization of the economic system may influence American ideologies and in consequence lead to changes in the institutional framework of the American economy. (2) The actual economic and political developments abroad may and do affect developments in this country, both with respect to the institutional framework within which the economic process takes place, and with respect to the economic process itself.

I shall first take up the problem of the possible influence of foreign economic ideologies on American economic ideologies. In other words, I shall first discuss the issue between the ideal of the controlled or centrally planned economy to which most European countries at present adhere and the ideal of the free enterprise system for which this country stands.

It is appropriate to start out by reminding you that ever since the First World War there has been, in all countries, a tendency towards increasing government control. The development in the inter-war period proceeded in all western countries in waves which were correlated with the waves in business activity, periods of depression being characterized by a new spurt of government control and periods of boom by a relaxation of such controls; but the general trend was towards more and more control.

Owing to different internal political developments, and to the fact that the war did not affect all countries equally severely, the countries of the world are, however, at present, as it were, out of step in their development towards state control of their economies. There are actually now roughly three different types of economic systems represented in the world. (1) At the one extreme stands Russia with a communist system, state ownership of the means of production, and complete control of the economic process by the state which directs the economy on the basis of a detailed production and consumption plan. (2) The "socialist" systems of Europe, best represented by the British economy. Private property in the means of production still exists, although inroads have been made in Great Britain by the nationalization of the coal mines and the transport system. The economy is controlled from above; and what is produced is no longer determined by the price system but by allocation of resources and by the almost rigid supplies of manpower over which the firms dispose. (3) At the other extreme stands the American economy which is a free enterprise system, with some control to be sure, but still a system in which private activity directed by the price mechanism determines what is to be produced. These three systems compete with each other for popular favor and the outcome of this competition hangs in the balance. It is indeed a very crucial period of economic history in which we stand.

On what does it depend which of these systems will gain the upper hand in the long run? It seems at first glance that the American system has the better chance to win out in the sense that western European countries are more likely finally to return to a free enterprise system than is the system of state control of the economy to be adopted in America. The American system seems to have the better chance simply because the political power lies with the United States which uses it, indeed, to influence the economic policy of European countries. The United States had, for instance, the lead in the negotiations concerning an international trade charter which was based on the ideal of free multilateral trade carried on by individuals. Earlier the United States Government took the lead in the negotiations for an international monetary understanding, negotiations which led to the Bretton Woods Agreement. This agreement also adheres to the free market ideal, inasmuch as it favors in principle the absence of state interference in foreign exchange

dealings and foreign trade, an aim that is incompatible with centrally planned economies.

But it would be wrong to draw too favorable conclusions from these international negotiations. One can hardly say that the ideals of the United States triumphed in the negotiations for an international trade charter. Foreign countries succeeded in watering down the original American proposals to such an extent that little is left of them. Nor can we draw optimistic conclusions from the fact that foreign countries have become dependent on the United States. The world, outside this country at least, has little faith in the free enterprise system, and ideals that run counter to the basic ideologies of this system have a strong appeal for the masses of the population. I refer in particular to the ideal of economic equality which is part of the philosophy of the British Labor party, and was part of the philosophy of the New Deal; even in this country it is still reflected in, among other things, the income tax system. The egalitarian ideal is bound to make itself felt more strongly again in this country should a depression develop here. The capitalist system is in its innermost nature anything but egalitarian. Its driving force is the entrepreneur who himself is driven by the prospect of profits. If the profit motive cannot work itself out because profits are too heavily taxed the capitalist system cannot function properly.

But whether the foreign ideals of central economic planning will gain the upper hand over the American ideal of a free market economy, or whether the victory will go to the free market sytem, will ultimately depend on the actual performance of these competing systems. Just at the present the advantage is all with the American system. Central planning in Britain has made a poor showing, and I know from personal contacts that many British economists who were previously ardent planners now advocate a return to the free market system. But in the longer run the fate of these different types of economic systems will depend, in my opinion, mostly on the answer to one big question; whether or not a severe depression again develops in this country. If it does, central planning and restrictions on the freedom of enterprise will almost certainly take a strong hold in this country, though perhaps not to the extent to which they are at present practised in Great Britain. Systems like the British one, whatever their faults are (and they are many), have the one advantage that they give security of employment to the labor class. And, in the case that a depression and mass unemployment arise in America, attention will be concentrated on this one favorable aspect of the British system to the neglect of everything that is unfavorable in it, such as its inefficiency, and central planning will for this reason alone appear as something worth imitating. The avoidance of a severe depression in this country is thus crucial for the question whether central planning will be taken over by the United States or whether the free market economy will prevail.

All I have said so far was based on the assumption that there will be no war in the foreseeable future. It is obvious that, if war should come, this country will be driven into a system of more or less complete control over production and consumption. Even the preparation for war tends to increase the interference of the government with the productive process.

Leaving this fundamental issue aside, and concentrating on the repercussions of foreign events on the American economy, we should expect to find these repercussions making themselves felt first in American foreign trade and foreign lending which constitutes the link between the American and foreign economies. It is important to realize here that although foreign events have a profound effect on American foreign economic relations, and therefore indirectly on the American economy as a whole, these indirect effects are smaller than they would be for almost any other country, simply because foreign trade is in the United States only a small percentage of total trade. American exports are as a rule only 8–10 per cent of American national income as against 25–30 per cent in England. In other words, the American economy comes nearer to being a closed trading area than the economy of any other of the more important countries except Russia. Events affecting foreign trade and lending need not therefore produce violent changes for the American economy either with respect to its institutional framework or with respect to the actual economic process.

What now are the effects of foreign developments on American foreign trade and lending? The main point is that at the present time political rather than economic considerations determine foreign lending and, to a large extent, exports and imports.

The counter part in foreign economic relations to an internally free enterprise system is foreign lending by private individuals or banks to the highest bidders, exports to those markets where

the best prices are paid, and imports from those markets where goods are cheapest. In the political situation in which we now find ourselves with the two major powers, the United States and Russia, attempting to draw as many smaller powers as possible into their own spheres of influence, neither foreign lending nor foreign trade will proceed along these free enterprise lines. This is quite obvious when we consider the American lending program. Ever since the close of the war American foreign lending has been predominantly government lending. Political considerations have dominated it, rather than the expectation of high yields on the foreign loans. This is particularly clear in the case of the European Recovery Program, under which the aid largely takes the form of outright gifts. The main purpose of the program is to prevent European nations from becoming Communist, and the tap of aid will surely be turned off for any country which joins the Communist camp. Foreign lending and foreign aid is now definitely "dollar diplomacy," and no longer motivated by the prospect of private gains. Exports, too, can no longer move freely to the markets where the highest prices are paid. A system of export licensing has again been introduced; exports of airplane engines to Russia, for instance, are no longer allowed, and we can expect that the licensing system will be handled in such a way as not to permit potential enemies of the United States to obtain from this country materials that can be used for war purposes. In short, who shall obtain capital or goods from this country is not decided any longer by the price mechanism alone, but largely by an act of state.

But quite apart from the effects of foreign *political* events on American foreign trade and lending, the mere fact that European countries, even friendly ones, have, in contrast to the United States, controlled economies completely changes the character of American foreign trade, in particular American exports. What is exported and to whom no longer depends on where the best prices are offered, even if the American government does not interfere at all. American exports are imports of other countries and many of these countries control them by systems of import licensing. Foreign governments then have a determining influence on the volume and type of American exports. The State Department aims at restoring a world in which such quantitative trade controls are abolished. But there is no hope that such controls will be abolished as long as foreign countries continue to pursue the policy of general economic planning. Imports as well as exports are for them an integral part of their production and consumption plans and must, therefore, be controlled as long as the internal economy is directed from above.

Another factor which should be mentioned in this connection as influencing American exports is the policy of the countries "behind the iron curtain." If they aim at self-sufficiency, as they seem to do, they will cut their imports from, and their exports to, the west as much as, and as fast as possible. The *direct* effect of this policy on American exports is negligible. American exports to that part of the world have always been very small. But the indirect effects might be considerable. Thus, if the eastern part of Germany is economically integrated with the eastern economies and, therefore, cannot "export" agricultural products to the western part, the United States may have to provide agricultural exports for some time to come to the western part of Germany, which can never raise sufficient food to sustain its population.

Political events and the character of foreign economic systems thus affect the institutional framework within which foreign lending and exports proceed, as well as the direction and the type of American exports. The free market principle which still applies in the internal economy has ceased to dominate exports and foreign lending. The influence of foreign events on *imports* is perhaps less strong. But here too they are important. The acquisition of strategic materials from abroad, and the protection of the domestic production of necessary war materials, are good examples of the influence of foreign developments on American imports. It is clear that the problem of securing an adequate supply of oil is no longer a mere price question, but is influenced by political events in the Arab world, and, in turn, affects American politics in that area. Another example is rubber. Natural rubber is cheaper than artificial rubber, but the possibility of a war makes it necessary to protect the domestic rubber industry against the competition of natural rubber from abroad even though, from an economic point of view, such a policy is unsound.

Although foreign developments have their first impact on foreign trade and foreign lending, their influence does not stop there. In discussing the further repercussions it is convenient to distinguish between effects in the more immediate future and effects in the more distant future.

In the immediate future the internal economy will be strongly influenced by the Marshall Plan, which itself is the result of political fear as well as of the economic distress of European countries. The effects of the Marshall Plan on the American economy have been carefully analyzed in official reports, such as the Harriman report, or the report of the Council of Economic Advisers to the President. Without going into detail, I may summarize these results by saying that the European Recovery Plan is likely to have two main consequences for the American economy: (1) It will create acute shortages in some of the products which both this country and Europe most urgently need, in particular scrap iron, steel, tractors, and other agricultural machinery; and also grains and oil. The increased demand for these products will lead either to a price rise of those that are in short supply or, as the President has suggested, to the reintroduction of controls for the purpose of allocating the scarce commodities between rival domestic and foreign consumers. (2) It will in all probability strengthen present inflationary tendencies. This is so first because foreign aid is likely to be financed with additional credit from the banks which will increase the aggregate monetary demand for commodities in the American market; and secondly because the price rise of those commodities in short supply may lead to a further increase in the costs of living and thus to further wage demands which will strengthen inflationary tendencies. The immediate effect of the foreign aid program is thus an adverse one. Nevertheless, the program is justified, even on economic grounds alone, if we look further ahead into the future.

Naturally the further we look into the future, the more speculation enters into the analysis. The ERP is intended to help European countries to develop their industries and in particular their exports, so that by 1951 they are independent of American aid and can pay for their imports with their exports. In this event the so-called "dollar shortage" would disappear, and they would be in a position to drop foreign exchange control and other types of quantitative trade controls. The benefit for the world, and also for the American economy, if this comes to pass will be enormous. It would mean that foreign trade could again move in the channels prescribed by the relative competitive situations of the various countries, and that the gain from international trade would be a maximum. But whether this development will occur is, unfortunately, not only a function of the amount of aid the countries concerned receive from the United States, but also of their own policies. As long as they insist on central planning (and socialist governments regard central planning as desirable for its own sake) foreign trade controls will stay, and a free multilateral system will remain a Utopia. An international trading system based on the ideal of multilateral trade and on the absence of quantitative trade controls means the application of the free market principles to international commerce; and it is all but impossible for a country to run the internal economy on the principle of central planning while at the same time it runs its foreign trade on the free market principle.

For the more distant future, I see four likely developments arising out of the foreign scene which will have a profound effect on the American economy.

The first is connected with the Marshall Plan. The American aid is to cease after a few years. This means that American exports are likely to drop quite suddenly by several billion dollars within a year. It is no easy matter to reduce international trade suddenly by this amount. The repercussions in other countries as well as in the United States may be severe. And unless compensated by other forces this sudden decrease in exports will tend to create unemployment in the United States. It would be desirable if the program envisaged a slow tapering off of the foreign aid from the high level of $5.3 billion planned for the first year.

The second development, perhaps not so far off, is the expansion of foreign agriculture. The decline in foreign agriculture resulting from the war has led to an expansion of American agriculture and high agricultural prices which are not likely to last. The decrease in foreign demand, and probably the competition of hitherto underdeveloped agricultural areas which are potentially cheaper producers than America will necessitate a contraction of American agricultural production. But agricultural groups are highly organized in this country and, with the cooperation of the United States Department of Agriculture, will almost certainly resist a contraction in agricultural production, and will attempt to exclude cheaper imports from abroad. It will appear to our policymakers that the choice is one between preventing necessary adjustments of American agriculture on the one hand and undergoing an agricultural crisis on the other. And they will very likely choose to protect agriculture through high tariffs, support

prices for agricultural products and the like. This means more government interference in the production process. Also it is in conflict with the foreign economic policy of the United States which has so far favored tariff reductions and the abolition of quantitative trade controls; a conflict which may end in a loss of American leadership in international commercial policy. If this outcome is to be avoided steps must be taken in time to transfer agricultural workers to other activities.

The third development I want to refer to works in the same direction: I mean the industrialization of underdeveloped countries. Such industrialization will force structural adjustments on the American economy. Some export markets will dwindle because of the industrialization abroad, causing declining incomes for producers and workers at home in the industries which lose their foreign markets. Some domestic markets such as the market for textiles will meet with increased competition from abroad. And if the industries concerned effectively resist the necessary adjustments, the result will again be a strengthening of the protectionist tendencies at home.

Finally, many countries, such as France, Great Britain, and others have, even before the ERP came into effect, received American loans which they are supposed to pay back. Loans can only be paid back by exports of commodities to this country. Greater imports from abroad mean greater competition for domestic industries. And again, just as in the early thirties, the response may be increased protectionism in the United States.

It is, therefore, too early to conclude from the present state of affairs that the United States will remain the champion of Liberalism in the field of international trade. At present the economic position of this country is so much stronger than that of any other country that it does not have to fear competition from abroad. But this situation may reverse itself. It is then that the genuineness of the American championship for relatively free multilateral trade will be tested. If this country should cease to press for this ideal, there is no chance of its ever being realized. No other country genuinely adheres at present to the ideal of free multilateral trade.

THE IMPACT OF EXTERNAL AFFAIRS UPON AMERICAN PUBLIC OPINION

CARROLL BINDER

Editorial Editor, *Minneapolis Tribune*

(Read April 23, 1948, in the Symposium on the Relation between International Affairs and the Traditional American Scene)

VICTORY over Spain signalized the emergence of the United States as a world power half a century ago.

De Tocqueville had foreseen the extension of American sway over half the globe in his remarkable study of *Democracy in America* published sixty-three years before Commodore Dewey steamed triumphantly into Manila Bay. Daniel Webster, William H. Seward, Ulysses S. Grant, and other exponents of "manifest destiny" subsequently had done their best to extend American influence and inspire their countrymen to think imperialistically.

William McKinley, not without considerable soul-searching, and Theodore Roosevelt, with a great deal of gusto, took the nascent world power into new and unfamiliar foreign paths. They had the help of able statesmen such as John Hay and Elihu Root and of gifted troubadours such as Senator Albert Beveridge.

Exponents of an earlier American tradition of anti-imperialism such as Senator George F. Hoar and Moorfield Storey vainly tried to prevent the republic from embarking on a course which they believed contrary to the national interest and a violation of the rights of others. Another and no less eloquent troubadour, William Jennings Bryan, ran for President on an anti-imperialist platform in 1900.

William McKinley and Theodore Roosevelt were elected in 1900 but by no means solely because they stood for expansion of American influence in distant parts of the world and their opponents were anti-imperialists.

While a considerable number of Americans viewed with pride, and another considerable number viewed with alarm and shame, what their country was doing beyond the seas, the great body of Americans remained oblivious to the implications of the United States' new status in world affairs. They were equally indifferent to the opportunities and the responsibilities accruing to a world power.

Ordinary American thinking continued to reflect attitudes developed during the eighteenth and nineteenth centuries when older world powers vied to shape the course of world affairs and the primary concern of most Americans was to avoid being injured by the play of power politics.

Theodore Roosevelt, who was the first American president in several generations to understand and take a lively interest in the intricacies of European and Asiatic politics, enjoyed a relatively free hand to exercise America's influence in international affairs.

The great body of Americans pursued the even tenor of their ways oblivious to what their President did to the Kaiser when the latter made passes at Venezuela or to the Colombians who tried to impede the building of the Panama Canal. Theodore Roosevelt's real role in the making of peace between Japan and Russia was only dimly appreciated by the rank and file of his countrymen.

Public opinion swelled with pride when the strengthened American fleet sailed around the world forty years ago. Most Americans took for granted the enlargement of the American heritage through new spheres of influence and moral mandates and such promulgations as Secretary of State Hay's "open door policy" in China. The ordinary American was neither elated nor alarmed over Secretary of State Philander C. Knox's dollar diplomacy in Latin America.

But there were undercurrents of moral concern about dealing justly with the little brown brother, governing with the consent of the governed, and not using the power of the many for the enrichment of the few which emerged sporadically.

John Hay recognized this variety of American thinking when he kept the United States from joining other foreign governments in grabbing imperial spoils in prostrate China. "We do not think," Hay observed, "that the public opinion of the United States would justify this government in taking part in the great game of spoliation now going on" in China.

Theodore Roosevelt's highhanded methods of obtaining the site for the Panama Canal troubled some Americans at the time the coup was staged but not enough to prevent consummation in 1903.

Eleven years later measures were instituted in Congress to assuage Colombian feelings and American consciences by a public confession of error and wrong-doing and a payment of $25 million to the Colombian government for injuries sustained. After prolonged contest between those concerned about wiping out a "stain on the national honor" and those concerned about maintaining the national prestige, the Colombians were given the money but not an express apology in 1922, nineteen years after the Panama coup.

Such conflicts of opinion as to what is right and expedient and such acts of imperialism and subsequent contrition were not infrequent in those days when different schools of Americans dreamed different dreams and pursued different goals for their country. They have not disappeared from American thinking and behavior but they are less frequent now that our foreign policy is shaped by a larger part of the American electorate and has a larger impact upon the lives of all our people than it did in those far away and long ago days.

When Imperial Germany invaded Belgium and began a war which was to last four years and set in motion a series of consequences which are still being felt, the great majority of Americans did not realize the significance of that event. To them it looked like another of those interminable and incomprehensible old world quarrels in which it was not our business to mix.

The ordinary American mother of those days "didn't raise her boy to be a soldier" and the ordinary American was content to see agriculture, industry, and finance prosper by selling to whichever belligerent could take delivery or offer attractive terms for a loan.

Only a relatively few Americans then realized that, for all its might, the United States still owed much of its security and well-being to control of the seas and consumption or distribution of its products by a friendly and prosperous Britain. Americans of this view and Americans culturally or sentimentally attached to the British or French did their best to throw American influence on the side of the Allies during the first years of the war. Americans with cultural or blood attachments for Germany joined with Americans hostile to Britain because of what it had done to Ireland or to the American colonies in opposing policies which helped the allied cause or injured the German cause.

It was only when Imperial Germany began to deal with the United States more and more arbitrarily, when it began to look as though the British would lose control of the seas and cease to be a cash customer for American surpluses, that a considerable number of Americans came to realize the United States could not afford to see Britain and its allies conquered by Germany. The ruthless sinking of American vessels was the occasion, but not the fundamental cause, of our going to war with Germany. But a great many Americans did not consciously grasp this vital concept. Their failure to do so has had unfortunate consequences for American policy and behavior ever since.

The nature of the first world conflict was obscured in many American minds by poorly stated war aims and misleading propaganda. What should have been presented purely and simply as a struggle to defeat a ruthless military effort to encroach on our freedom, peace, and security, was idealized into a war to end war for all time and a prelude to making all the world over in the image of American democracy.

When it became apparent that many postwar governments were anything but democratic in actual practice and that genuine peace and security had not been achieved, many Americans felt they had been betrayed. Had the American people been plainly told they were fighting to make the world safe for democracy in the United States and any other country whose people wanted to be free and democratic they would have been spared costly postwar disillusionment. Had the American people been made to realize in 1917–1918 that their war with Germany was a simple struggle to prevent an aggressor from becoming so strong militarily that it could dominate all other powers, they would have been better fitted to deal realistically with the problems confronting them in the twenties and the thirties—and the forties and fifties.

Because the rank and file of Americans (and many of their leaders) never were familiarized with the actualities of power politics they were easily misled by the "debunkers" who flourished in the twenties and early thirties. The cult which proclaimed in many classrooms, public meetings, newspapers, and in Congress that we needlessly and uselessly were plunged into war in 1917 by the merchants of death, the Anglophiles, and the international bankers thrived on the unfamiliarity of large numbers of Americans with contemporary world affairs and world history.

The ignorance was not due to lack of available information. The better newspapers of those days, as of today, afforded the American reading public a larger body of up-to-the-minute informa-

tion and discerning comment about world affairs than was or is available to any other people. There were plenty of sound histories to consult if one wanted to acquaint oneself with the true nature of relations between nations and peoples, present and past.

Had the American people listened then to wise historians such as the late Carl Becker instead of to the debunkers they would have served their own and mankind's interests by the intelligent practice of power politics. The debunkers gave them the false impression that power politics is inherently immoral, so the United States in those days influenced the course of events more by what it did not do than by what it did in world affairs. And the forces of evil had a relatively free hand to produce the catastrophe of 1939–1945.

Power never vanishes and politics is inseparable from power, Becker tried to teach a people possessing more potential power than any other people on earth but with a guilt complex about engaging in "power politics."

"In each country," Becker observed, "there is either a stable balance of power; or no balance of power at all; but there is always power.

"If you do not wish to retain it, or wield it, somebody else will. You may feel the effects of power as a passive recipient; you may deal with it as an active agent. There is no escape; no immunity.

"Political power exists in the world and will be used by those who have it, for good ends, we hope, but at all events for some ends."

Because the Lodges, Borahs, Johnsons, and other influential leaders of the period just after the First World War failed to understand the possibilities for peace and security of intelligent, positive American participation in power politics and because they persuaded the American people by a narrow majority to follow their isolationist policies, the dearly bought victory was largely frittered away. We played power politics badly by what we failed to do while professing to eschew power politics.

Because a narrow majority of Americans thought they could remain at peace and prosperous by leaving Europe and Asia to their own devices, except for sporadic advice to disarm and prodigal loans without thought of how the loans would be used or how they might be repaid, there was no genuine peace and security for either the Old World or the New.

The American people learned the hard way that it is a quite different thing to be a creditor nation than it was to be a debtor nation, as we were prior to the First World War. They learned twenty years later, at the cost of 400,000 American lives and $350 billion that the United States could not keep out of any major conflict between the other great powers.

To understand the confused, and often contradictory, behavior of the United States in international affairs between the First and Second World Wars one must bear in mind the way Americans thought about themselves and the rest of the world in those days.

In the minds of many of his nephews Uncle Sam assumed the form of a benign but unworldly dupe who repeatedly lost his shirt to smarter and less scrupulous foreigners in the international poker game. Contending that "the United States never lost a war or won a conference," Americans of this turn of mind disapproved of U.S. participation in any international negotiations concerned with political or economic problems.

Attributing Europe's wars and Europe's financial difficulties to the maintenance of large military establishments, many Americans assumed peace and prosperity would quickly follow the drastic reduction of European military establishments. The United States government, accordingly, brought repeated pressure on European governments to make disarmament pacts. It was not willing, however, to accompany its advice with a guarantee to give military assistance to any country which might be attacked after reducing its military establishment along the lines suggested by the U.S. The U.S. urged, instead, that governments put their trust in pacts "outlawing war" sponsored by Secretary of State Kellogg. Such pacts, like the arbitration treaties sponsored fifteen years earlier by Secretary of State Bryan, had much greater appeal for the American public than they had for more seasoned students of world history and politics.

Because no prospects of personal or national gain tempted them to go to war against another nation, many Americans in those days assumed that no other people could be induced to attack the United States or any other peace-loving country. This universalization of their own pacifist thinking made Mussolini's, Hitler's, and the Japanese militarists' threats to destroy the "plutocratic democracies" fall on deaf ears. Many Americans thought the Axis leaders were harmless histrionic megalomaniacs and sawdust Caesars because they had never had first-hand experience with that type of power politics.

Other Americans assumed that the Axis would not dare attack the United States because it was rich and powerful.

These were the states of mind most apparent in the United States and which found most common expression in Congress.

Secretary of State Stimson did not get very far with his proposals in the winter of 1931–1932 to nip Japanese aggression in the bud in Manchuria. Mussolini's subsequent aggression in Ethiopia, Hitler's march into the Rhineland, and German and Italian intervention in Spain increased the number of Americans aware of the danger to American peace and security in such repeated aggression.

But not enough Americans cared deeply enough to commit the United States to forceful leadership of a movement to halt Axis aggression before it launched global hostilities. Franklin D. Roosevelt's trial balloon about quarantining aggressors in 1937 did not evoke sufficient favorable response at home or abroad to encourage the President to pursue that line of action.

It took the fall of France, the battle of Britain —and Pearl Harbor—to make the American people as a whole realize that the United States was too challenging a citadel of freedom, prosperity, and potential power to be left undisturbed by the enemies of freedom, the lusters after plunder, and the seekers after world dominion.

It took all those disasters to prove to everyone that the American people's aversion to brute force and ruthless cunning as instruments of national policy was not shared to any great extent by the German and Japanese people. It took all those things to make the more parochially minded among us understand that when a country grows so large and rich as the United States it must, in the absence of an effective collective security organization, see to its own defense rather than depend on other countries to hold the line for it.

The impact of the Second World War and its aftermath upon American public opinion should be considered in the light of two underlying causes of isolationist thinking prior to 1940. One was the feeling that, since they did not understand the rights and wrongs of European conflicts, it was unwise for the United States to become involved in them. The second, and the stronger, reason was the belief that the United States had nothing to fear from any European power and therefore no reason to interfere in matters not directly concerning it.

Our unsolicited advice to disarm, to free Ireland or India, or to give the Jews a better break in Palestine was regarded as irresponsible interference by those to whom it was directed but not by those who offered it. The belated realization that only the moral courage and the diminishing physical resources of the British people stood between the emboldened Axis war machine and the United States dispelled those twin illusions within the space of a few months. When the inhabitants of a distant island no bigger than the state of Montana audaciously came several thousand miles across the Pacific to attack Hawaii and simultaneously struck at Manila and Singapore, the American people realized as never before that their geographical position and their material resources afforded them no immunity from ambitious aggressors.

I cannot conceive of the American people ever again lapsing into the isolationist illusions so many of them cherished prior to 1940. Americans may disagree as to the cause and cure of troubles in Europe and Asia but the majority will continue to realize, I am sure, that the United States cannot remain indifferent to those troubles.

When the American people understood that their peace, freedom, and security demanded the total defeat of the Axis they spared no effort to accomplish that defeat. They amazed their allies and confounded their foes by the way in which they created the most formidable fighting machine the world had ever seen out of their young men and women, most of them without peacetime training in the military profession. Equally amazing was the way in which the mines, factories, farms, oil fields, and shipyards of the United States became the arsenal of the allied world.

At its peak the military establishment of the United States numbered 12,241,336. At one time the U.S. Army had 5,472,282 men serving in scores of overseas theaters, thousands of miles from continental United States. A Navy, Marine Corps and Coast Guard of 3,950,000 defended the security of the American people and their allies on all the seven seas.

Thanks to this impressive response of the American people and their allies to a common peril the Axis was defeated, albeit at terrible cost in life, limb, human suffering, and physical destruction. Heavy as the cost has been, and will continue to be, for the United States' participation in the Second World War, it emerged from that conflict relatively much less injured than any other country.

When de Tocqueville wrote his famous anticipation of American greatness in 1835 he thought we were "marked out by the will of heaven to sway the destinies of half the globe." The other half of the globe, de Tocqueville correctly anticipated, would come under the sway of Russia, whose "starting point is different and course is not the same," but likewise, de Tocqueville predicted, would proceed with "ease and celerity along a path to which the human eye can assign no term."

It took the United States and Russia just 110 years to fulfill de Touqueville's expectations. While a third power, Great Britain, survived the Second World War along with them, Great Britain was so badly spent physically and financially by what it underwent between 1939 and 1945 that it could not survive without repeated transfusions from one or the other of the two stronger survivors. Having a common cultural heritage, common political and economic institutions, and common aspirations for a free and peaceful world with the United States, Great Britain naturally preferred to receive transfusions from the United States.

Although the United States has only 6 per cent of the world's population, it commands over half the industrial capacity, financial resources, naval, military, and air strength of the present day. It is the super power of the postwar world. But it is neither strong enough nor imperialistically-minded enough to assure its peace and security by a *pax americana*. It needs the cooperation of other peacefully disposed nations to maintain a world order in which it may feel secure and prosper.

American-British cooperation is as vital to the free peoples in the postwar period as it was during the period of the Axis' greatest strength. That is because the defeat of the Axis did not automatically bring security and peace for the victorious Allies. Despite exceptional American-British efforts during the war to persuade Russia that it had nothing to fear, and much to gain, by continuance in peacetime of the cooperation which had contributed so greatly to Axis defeat, Russia has refused to cooperate.

Russia, to the dismay of its former allies, has chosen to pursue its security by doing everything in its power to render them and other non-Soviet powers insecure. The concessions, made at heavy cost to the peoples of eastern Europe and Asia, which were intended to reassure Russia have only served to strengthen and embolden Russia. Instead of being appeased by President Roosevelt's and Prime Minister Churchill's great wartime strategical and political sacrifices, Russia demanded bigger and more costly postwar concessions. Instead of cooperating in the creation of an effective collective security system through the United Nations, Russia has flagrantly misused its veto power in the U.N. to prevent that organization from fulfilling its purpose.

While creating its own security system of an enormous war machine reinforced by Soviet-dominated satellite states and formidable fifth columns in the non-Soviet countries, Russia has consistently sabotaged efforts of the non-Soviet countries to institute effective peace preservation machinery which would permit the reign of law and universal reduction of military establishments.

Russia's anarchistic pursuit of its own security at the expense of everybody else's security has delayed the consummation of peace treaties for Germany and Japan. By deliberately fostering tension and insecurity, Russia has compelled the non-Soviet countries to maintain costly military establishments.

Russia's sabotage of attempts to promote economic recovery and the sabotage by Communist-dominated labor unions in war-ravaged countries has placed great strain upon the capitalistic system. These tactics are designed to expedite the substitution of a Communist economy for the capitalistic economy in fulfillment of the prophecies of Marx, Lenin, and Stalin.

The Soviet challenge to their peace, freedom, and security was so arrogant and menacing that no American could ignore it. One did not need to know European history or politics to realize that here was a regime which had to be reckoned with. This was an even clearer case of "we or they" than that offered by the Axis. For the Communists use techniques and have goals which touch things dear to ordinary people in ways not employed so effectively and obviously by the Nazis or the Japanese.

While all Americans were deeply disturbed by the Soviet challenge their reactions were not uniform.

Twenty-four per cent of the people polled by Dr. Gallup at the end of 1947 reacted in a manner reminiscent of the mood after the First World War. That many Americans told Gallup pollers they thought it was a mistake for the United States to fight the Second World War. Another 10 per cent had no opinion. In other words, only 66 per cent of the people polled at the end of 1947

clearly realized that the United States had to fight the Axis to preserve its freedom and security.

The other 34 per cent were so disappointed by the non-materialization of peace of mind, to say nothing of international peace, as a result of the defeat of the Axis that they lost sight of how we came to fight the Axis and the plight the United States would be in had the Axis not been defeated or been defeated without American aid—if such an issue of the war can even be imagined.

Another immature reaction to Russian post-war behavior is that of the minority whose most conspicuous exponent is Henry Wallace. These are victims of the old isolationist fallacy of assuming that the men shaping Russian policy at heart are as peace-loving as is the average American. These universalizers of their own good intentions have learned nothing by our costly experiments in appeasing Russia and are oblivious to the Communist conviction that capitalistic democracies must be destroyed before the Communist paradise can truly flourish.

Members of this group are afflicted with a strong guilt complex about what the United States and its allies have done and not done in the past one hundred and fifty years and a blind spot for what Russia has done and not done in the past thirty years. So they demand that we go not only the second but the twenty-second mile to win over the Russians.

A small minority of Americans, who overestimate the possibilities of atomic and aerial warfare and underestimate the difficulty of winning a conflict which would be as much ideological as military, talk foolishly of "bombing it out" before Russia acquires a stockpile of atomic bombs. An infinitesimal minority, which considers Russia the true fatherland, is doing its best to prepare the United States for sovietization. Fortunately, these minorities have no great influence on the thinking and behavior of the great majority of Americans. Most Americans detest Russia's behavior and are determined to prevent Russia from cheating the United States and its allies out of their freedom and security. Dominant American opinion fervently hopes the cold war will not become a shooting war but would not shrink from all-out resistance if the Soviet power attempted to impose its will on the free peoples by brute force.

Such is the distance the American people have come in their thinking about the United States' foreign relations since the end of the First World War. The Axis is partly responsible but Russia is mainly responsible. Russia has behaved so shockingly in the United Nations and in the conferences called to make peace that great numbers of Americans are deeply alarmed.

Russia's ruthless extension of its sway into central Europe, notably in Czechoslovakia, brought home to ordinary Americans the sober realization that extreme measures may be necessary to prevent this sort of thing from happening in western Europe and, if it should succeed there, in the United States itself.

Jan Masaryk's death plunge from a building in which he had striven to maintain a bridge between the Soviet and the democratic world shocked many a hitherto passive American into support of the program to contain the Soviet power before its gets wholly out of hand.

Soviet attempts to overthrow the democratic regimes in Italy, France, and Austria and to prevent the development of democratic regimes in Germany and Korea have convinced the majority of Americans that it is in their interest to provide any economic assistance which may be required to enable those countries to resist Soviet pressure from within and without.

The decision to provide $5,300,000,000 worth of assistance during the next twelve months to sixteen countries participating in the European Recovery Program represents a major revolution in American policy. It is a commitment to take an active part in European affairs in the name of, and with the economic resources of, the entire American people. Although the initial commitment is only for twelve months, it assuredly will be continued as long as American interests will be served by such assistance and such participation.

This commitment was made with remarkable dispatch and unanimity. But it was done with full knowledge of its implications and after full public discussion. ERP was adopted with the support of an amazing varied group of organizations. Farmers, wage-earners, business and professional people from all sections demanded that Congress do what is necessary to enable potential allies to remain on our side and free of Soviet domination.

The purpose of ERP and the manner of its adoption make it far more important than the larger sums which previously were provided by the American people for the assistance of other countries. But those sums were eloquent evidence of the lengths to which the United States went to cope with threats to world peace and well-being.

The total amount of American assistance to other countries up to the spring of 1947 exceeds $70 billion. Between July 1945 and July 1947 the American people gave $16,788,000,000 worth of foreign assistance. While they were making up their minds about ERP Americans rushed $579 million worth of temporary assistance to imperiled France, Italy, and Austria in the winter of 1947–1948.

Before they became so acutely alarmed about the Soviet threat, Americans used to ask themselves how much economic assistance they could afford. A score of senators approached ERP in that spirit until the last stages of the debate. As the crisis developed the decisive consideration became: what is necessary to make sure that the Soviets do not overrun the world?

There is widespread feeling that the staggering sum of $11 billion which the United States has been spending for its national defense may not be enough. The President has proposed $4 billion additional appropriations for defense. There is pressure for expansion of the air force and the navy and for increased expenditures for atomic development and research in scientific warfare.

Many Americans are not stopping there. Two other revolutionary steps are being considered. They want the United States to follow up its economic assistance to imperiled western European countries with a pledge of U.S. military assistance if those countries should be attacked and go to each other's assistance in accordance with a mutual aid pact signed at Brussels in March 1948. This would be an extension to Europe of the commitments made to other American republics at Rio in 1947.

The United States broke precedent when it offered to join with Great Britain and Russia in an alliance to keep Germany disarmed after the war. The proposal to underwrite the Brussels mutual aid pact would take the United States much deeper into European affairs than anything previously contemplated.

Equally revolutionary are the proposals to institute selective service and universal military training in peacetime. The fact that such steps are being seriously considered in an election year is indicative of the impact of Soviet expansionism on American public opinion.

Our forthright—and effective—efforts to encourage the Italians to reject Communism in the April elections constituted another intervention in European affairs which would not have been thinkable during the first forty-eight years of the United States' great powerdom. So was Secretary of State Byrnes' putting Russia on the spot with its German and Polish Communist followings by his speech about the eastern frontiers of Germany at a difficult moment of peace treaty discussions.

The American people still have a lot to learn about foreign relations. One has only to note the mishandling of the Palestine and Chinese situations to see what harm can be done when partisan politics are permitted to influence decisions affecting other countries as well as critical national interests. But in the last three and a quarter years, Palestine and China excepted, we have made phenomenal progress towards conducting our foreign policy on a bipartisan instead of a partisan basis. U.S. participation in the United Nations and ERP was achieved by the enlightened cooperation of the leaders of the Republican party in Congress with a Democratic President.

The development of bipartisan foreign policy has not been easy. Narrow-minded Democrats have begrudged sharing credit with the Republicans for achievements they believe likely to find favor with voters. Narrow-minded Republicans have resented having to share responsibility with Democrats for measures they believe likely to arouse voter resentment. The White House and the State Department have not always consulted the Republican congressional leadership before committing the nation to some debatable policy such as the Truman Doctrine. That has led the Republicans to protest that they ought not to be expected to be in on the crash landings if they are not consulted before the take-off. Nevertheless, the President was not let down on his commitments to Greece and Turkey as Woodrow Wilson's commitments at Versailles were repudiated. The President is not being harassed by the Republicans in Congress for his bungling of the Palestine issue in the U.N. nearly so much as would have been the case in similar circumstances a decade ago.

For such progress as has been made towards continuity and stability in our foreign policy much credit is due a converted isolationist, Senator Arthur E. Vandenberg of Michigan. The senior Republican member of the Senate Committee on Foreign Relations reversed the convictions of a lifetime under the impact of the V-1 and V-2 attacks on Britain in 1944. The possibilities of modern warfare convinced Vandenberg that oceans no longer afforded security to the United States.

Senator Vandenberg's speech of January 10, 1945 marked a turning point in the thinking of

many of his countrymen as well as of Senator Vandenberg. It was a notable illustration of the impact of external affairs upon a man who helps make American policy as well as upon American public opinion.

The evolution of Senator Vandenberg's, the Republican party's, and the nation's thinking during the last three and a quarter years is the most impressive evidence I can cite of the impact of external affairs upon American public opinion.

The American people are now life members of the world community and they know it—even though they do not always know just how to exercise that membership.

That so many should have learned so much that was vital to their well-being before it was too late to take wise decisions for their country and their time is an impressive demonstration of the democratic process and of adult education in a free society.

THE REPERCUSSIONS OF FOREIGN AFFAIRS ON THE AMERICAN TRADITION OF CIVIL LIBERTY

ROBERT E. CUSHMAN

Professor of Government, Cornell University

(*Read April 23, 1948, in the Symposium on the Relation between International Affairs and the Traditional American Scene*)

A REVIEW of American history down to World War I shows little connection between our foreign relations and the American tradition of civil liberty. We pursued a foreign policy during most of that period which was essentially isolationist. We drove the best bargains we could for the expansion and protection of American business interests throughout the world, and we managed to to acquire a substantial colonial empire. But we still followed the cardinal principle of scrupulously avoiding the "entangling alliances" against which Jefferson had warned us. The American tradition of civil liberty remained something of domestic concern only. We came, with the passage of years, to regard civil liberty as a national family heirloom; certainly it had nothing to do with the economic diplomacy which dominated our relations with foreign powers.

World War I hurled us, for the first time in our history, into the center of a vast European struggle for power. We became heavily involved, although as soon as the war was over we struggled valiantly to get ourselves un-involved and to return to our traditional position of happy isolationalism. The American tradition of civil liberty was not very directly affected by World War I. We faced neither a serious external threat to our national safety, nor any ideological assault upon the principles of constitutional democracy. When President Wilson asked Congress to declare war on Germany in order "to make the world safe for democracy," he was not seriously suggesting that American democracy was in danger from a foreign enemy. He was protesting against big nations overrunning little nations. We fought a war against an Imperial Germany which still gave its people complete security of property and of person, and a substantial measure of freedom of speech, freedom of press, and freedom of assembly. It did not subscribe to any Bill of Rights of an Anglo-American pattern, but it conducted its internal affairs in accordance with a generally liberal scheme of political values, except in cases where military discipline was involved. We were fighting an insolent imperialism, but we were not fighting a crude and ruthless totalitarianism.

World War I, however, did have one important impact upon the American tradition of civil liberty. This was a domestic and psychological impact. We had had no recent experience with the difficult task of drawing the wartime line between the conflicting claims of national security and civil liberty. We were suddenly forced to draw this line. Our responsible leadership, with the support of a confused but overwrought public opinion, allowed itself to be drawn into an orgy of witch-hunting in which some of our traditional civil liberties were ruthlessly overridden. The sorry story of this wave of repression, during and immediately after World War I, is one which thoughtful citizens today regard with an acute sense of shame. Our first major entanglement in world affairs had produced here at home a rather hysterical assault upon the American tradition of civil liberty.

World War II confronted us with a strikingly new danger, and the end of the war placed us in a new international role. It was clear from the beginning that the stake of World War II was the survival of the democratic way of life on this globe. The nations which had come to believe that democracy and civil liberty are among the lasting values which civilized nations have achieved through centuries of experience became locked in a death struggle with totalitarian states which were the avowed enemies of all civil liberty and political democracy. We won that desperate struggle, and with high hopes joined in the effort to establish a United Nations which would prevent future wars and achieve the spread of democratic principles throughout the world. We are still engaged in an effort to accomplish those high purposes. It has become painfully clear, however, that we are now heavily involved in a "cold war" with Soviet Russia, a totalitarian regime hardly less hostile to western democracy and civil liberty

than Nazi Germany, and a nation determined to bring about the world-wide spread of Communist doctrine and power by any means available.

These two post-war developments give us the key to the problem of how our American tradition of civil liberty is presently affected by our international relations. It is affected in two quite distinct ways. We are being pulled in two opposite directions with respect to civil liberties. In the first place, we find ourselves the most powerful exponent of democracy and civil liberty in the present international effort to establish an International Declaration on Human Rights and an International Covenant on Human Rights. We are leaders in an effort to make the American tradition of civil liberty a world tradition. In the second place, we are alarmed almost to the point of hysteria at the growingly aggressive and hostile attitude of Soviet Russia on the Continent, as well as at the menace of Communist infiltration here at home. We are resorting to counter-attacks in the form of loyalty purges and legislative investigations of subversive or un-American activities which seriously threaten freedom of speech, press and assembly. Let us examine more closely how the American doctrine of civil liberty is being affected by these two opposite pulls, which result from our international responsibilities and anxieties.

It was clear from the beginning of World War II that if the Axis powers were defeated an effort would be made to establish not only some United Nations organization, but also an international Bill of Rights. As early as January, 1941, President Roosevelt, in a message to Congress, had set as a major objective of American foreign policy the securing of the four freedoms to all peoples everywhere throughout the world. Later in the same year, the four freedoms were incorporated into the Atlantic Charter. The war itself came to be viewed ideologically as a death struggle between the forces defending human liberty and those who sought its complete destruction. When the war was over, and the cause of human liberty had been saved, it was wholly natural that the newly born United Nations should bring about the creation of a Commission on Human Rights and should direct it to prepare a Bill of Human Rights to be submitted to the General Assembly for its approval.

It was probably inevitable that the United States should assume a position of leadership in this important task. We had not only contributed heavily to the winning of the war, but we had supplied a large measure of the moral leadership so necessary to military victory. The American tradition of civil liberty has long been known throughout the world. I am not at all sure that we actually protect civil liberty in this country any better than it is protected in Great Britain, but we talked a good deal more about doing so, and we have carefully listed our civil liberties in bills of rights so that all the world may read. The American people are justly proud of our great tradition, and we eagerly grasped the opportunity to extend it to other nations less fortunate than we. Mrs. Roosevelt was made chairman of the Human Rights Commission, and American technical assistance has contributed heavily to the Commission's work. That work is still in the formative stage. Drafts of a Declaration on Human Rights and of a Covenant on Human Rights have been prepared and are in the process of being discussed and revised. Many of the provisions of these drafts sound very much like the clauses found in American bills of rights, state or federal.

I think it is clear that one of the important repercussions of our post-war international position in the family of nations has been to give to us a challenging opportunity to spread the gospel of the American tradition of civil liberty throughout a large part of the civilized world. We shall obviously not be able to spread that gospel in Soviet Russia or in her satellites, but certainly we are entitled to take satisfaction in placing our long experience in democracy and freedom at the service of those nations which wish to follow the same road. It is a very heartening experience for this country to realize that we are, perhaps, the leading exponent of those civil liberties which make a nation free. It has also been a sobering experience, for it has made us realize that in spite of our achievements in maintaining the American tradition of civil liberty, we have also our shortcomings, and we often fail to attain fully in practice the high ideals for which we stand.

It is seldom that either individuals or nations are obliged to depend entirely upon their own soul-searching in order to discover their shortcomings. There are usually friends or enemies who are glad to point them out. We learned this during the early days of the recent war. A month after Pearl Harbor a peculiarly brutal lynching occurred in a small town in Missouri. Within forty-eight hours German and Japanese short-wave radios were broadcasting the ugly story as propaganda to show how the great American democracy deals with its racial minorities. Our enemies were

not slow to tell the world that we do not practice what we preach. Since the end of the war we find that any conspicuous failure to protect civil liberty here at home proves a serious obstacle to the success of a foreign policy devoted to the world-wide extension of the four freedoms. This problem, and it is for us a new problem, was effectively stated in the Report of the President's Committee on Civil Rights:

> Our position in the postwar world is so vital to the future that our smallest actions have far-reaching effects. We have come to know that our own security in a highly interdependent world is inextricably tied to the security and well-being of all people and all countries. Our foreign policy is designed to make the United States an enormous, positive influence for peace and progress throughout the world. We have tried to let nothing, not even extreme political differences between ourselves and foreign nations, stand in the way of that goal. But our domestic civil rights shortcomings are a serious obstacle.

In a letter to the Fair Employment Practice Committee on May 8, 1946, the Honorable Dean Acheson, then Acting Secretary of State, stated that:

> ". . . the existence of discrimination against minority groups in this country has an adverse effect upon our relations with other countries. We are reminded over and over again by some foreign newspapers and spokesmen, that our treatment of various minorities leaves much to be desired. While sometimes these pronouncements are exaggerated and unjustified, they all too frequently point with accuracy to some form of discrimination because of race, creed, color, or national origin. Frequently we find it next to impossible to formulate a satisfactory answer to our critics in other countries; the gap between the things we stand for in principle and the facts of a particular situation may be too wide to be bridged. An atmosphere of suspicion and resentment in a country over the way a minority is being treated in the United States is a formidable obstacle to the development of mutual understanding and trust between the two countries. We will have better international relations when these reasons for suspicion and resentment have been removed.
>
> "I think it is quite obvious . . . that the existence of discrimination against minority groups in the United States is a handicap in our relations with other countries. The Department of State, therefore, has good reason to hope for the continued and increased effectiveness of public and private efforts to do away with these discriminations."

The vulnerable spots in our domestic civil liberty record have proved embarrassing in connection with our efforts to further the work of the Commission on Human Rights in drafting an International Declaration and Covenant on Human Rights. Soviet Russia has gloated over these shortcomings and has exploited them to the fullest extent. Russia and the Ukraine are both represented on the Commission on Human Rights, but it is obvious that a totalitarian state can never honestly subscribe to a Declaration or Covenant on Human Rights in which the democratic freedoms which comprise the American tradition of civil liberty are set forth. At the beginning of the discussions at Geneva the Soviet delegate on the Commission served notice that the Soviet Union would prepare a draft embodying its conception of a Declaration on Human Rights. Until this was done there would be no point in discussing any other draft. When the committees of the Commission moved to consider a draft of a Covenant on Human Rights the Soviet delegate pointed out that a covenant ought not to be considered until a declaration of principles had been agreed upon. And, when the question of implementation of a covenant came up, the Soviet delegate stated that it was premature to discuss implementation before the covenant to be implemented had been agreed upon. When in December, 1947, Mrs. Roosevelt released to the press the text of the American draft of a world bill of rights, the Russian reaction was to release through its delegate in Geneva a bitter attack upon Negro segregation and lynchings in the United States.

Thus our foreign relations have had a definite impact upon the American tradition of civil liberty. It has given to us, as the world's greatest democracy, a post of leadership in the all-important task of establishing our doctrines of civil liberty throughout the world as the working principles by which the lives of free nations are to be governed. It has also made us acutely aware of the degree to which that leadership is weakened, and our influence impaired, by our failure here at home to live up fully to our ideals of civil liberty. We are made to feel the force of the solemn warning contained in the last sentence of the Report of the President's Committee on Civil Rights, which reads: "The United States is not so strong, the final triumph of the democratic ideal is not so inevitable that we can ignore what the world thinks of us or our record."

When we turn to the second major repercussion which our foreign relations have had upon our tradition of civil liberty, we find something which is both depressing and alarming. This is an official and popular state of mind dominated by the

fear of Russian aggression abroad and Communist infiltration at home. It is a state of mind which has led us to adopt a variety of repressive security measures. These security measures are depressing because we cannot deny that there is need for them. They are frightening because their overzealous or brutal administration would destroy the civil liberties upon which a free democracy must rest.

I am unable to agree with those who lightheartedly tell us that there are no present threats, foreign or domestic, to our national security, and that the Government's counter-measures against them are unnecessary and arbitrary. We are familiar with the infiltration tactics of the Nazi, Fascist, and Communist regimes. We observed them before and during the war; we have recently observed them in operation in the Russian satellite countries of Eastern Europe. I see no reason to doubt, and a good deal of reason to believe, that there are at present in this country an undetermined number of persons zealously promoting the interests of the Soviet Union. One cannot read the report of the Canadian Royal Commission, which tells the grim story of how Canadian officers and scientists gave confidential information to agents of the Russian government, without realizing that we may be much more vulnerable than we would like to believe. That is a rather frightening report. Our government would be foolhardy if it did not carefully appraise all these dangers to the national security and take suitable measures to deal with them. This is, of course, a frank admission that one of the unpleasant repercussions of our foreign affairs has been to make necessary security measures which directly impinge upon the American tradition of civil liberty.

There is nothing new in all this. Throughout history democracies have faced from time to time the dilemma presented by the conflicting claims of national security and civil liberty. The dilemma is always presented in concrete terms; how much civil liberty are we justified in sacrificing in order to ward off some particular threat to the public safety? There is no mathematical formula which resolves that conflict. The basic principle, however, which should control the solution of these specific issues was stated many years ago by the great English liberal, Edmund Burke. He said: "Liberty, too, must be limited in order to be possessed. The degree of restraint it is impossible in any case to settle precisely. But it ought to be the constant aim of every wise public council to find out by cautious experiments, and rational cool endeavors, with how little, not how much, of this restraint the community can subsist."

If we are to preserve intact the American tradition of civil liberty it is vitally important that the American people have a clear understanding of the security measures which are presently in operation and how they are administered. Without this knowledge we can hardly judge fairly whether all these measures, or any of them, go beyond the "rational cool endeavors" with which a responsible and wise democratic leadership ought to be protecting our national security. Let us examine therefore the more important phases of our present security program.

In the first place we may group together a number of measures and policies which produce the cumulative effect of dropping, if not an iron curtain, at least a fairly opaque curtain, around an ever-increasing range of governmental activities. Congress has amended the Espionage Act of 1917 to make it a crime for any officer or employee of the government to disclose without official permission any confidential information secured by him in the course of his employment by the government. Responsible executive officers are given wide discretion in classifying information or documents as confidential. In the exercise of this broad discretion a great deal of information regarding governmental matters is being withheld from public knowledge. Secret government information must not be disclosed to the peril of the national security; but we have to accept wholly on faith the official declarations that all this so-called "classified" information really relates to the problem of safety, rather than to the somewhat natural desire of public officials to avoid the public scrutiny of their acts. Some time ago a responsible committee of the Federation of American Scientists circulated a questionnaire to a number of laboratories in which secret scientific work for the government was being carried on. The questions were designed to find out how many scientists are employed on secret projects, what standards and procedures are used to determine their loyalty, and how many have been refused clearance for loyalty reasons. The Army and Navy promptly classified most of the answers to these questions as confidential, and advised the laboratories that they would be violating the Espionage Act if they replied to the questionnaire. It is impossible for an outsider to form an opinion on what threat to the public security would have resulted from giving the information asked for.

Nor were the Army and Navy willing to explain why the secrecy order was issued. It is not reassuring, however, to have one of the civilian scientific agencies of the government, through one of its officials, refer to the questionnaire in a letter in these words: "There are in existence today a large number of organizations whose objective is to gather such information and later use it as material for propaganda and 'smear' programs in an attempt to discredit the U. S. form of government." That certainly is one reason for refusing to release information about government practices, but it is hardly a reason connected with the public security.

Besides this enlargement of the area of official secrecy the government is placing restraints upon individuals who wish to travel abroad to attend conferences and express opinions upon questions of public interest. It is reliably stated that one of the most rigid loyalty tests being used in Washington today is the one applied to a man seeking a passport or a visa. A large number of American citizens have been denied passports or visas recently. In most cases no explanation is made for the refusal. In the case of a member of Congress who wished to attend an international conference, the State Department frankly stated that it did not want the Congressman to go to Europe and say things which might not be in harmony with the Department's present policy. He was refused a visa. Here again it is not easy to judge the pros and cons with confidence because, as a rule, the officers who impose these restraints decline to explain or justify them.

A second phase of our security program comprises the elaborate loyalty tests which have been set up to purge the Government service of disloyal officers and employees. These loyality tests in the main are grounded upon the President's Loyalty Order of March 21, 1947. Reduced to its simplest terms, this order does the following things: it requires an investigation into the loyalty of every person who enters the federal service; it establishes procedures by which employees accused of disloyalty may have their cases reviewed, and provides an appeal to a specially constituted Loyalty Review Board; and it sets forth standards by which disloyalty in an employee is to be determined. The Loyalty Order has been in operation for some little time and certain general facts about it may be stated, although it is much too early for a final judgment.

On the credit side of the ledger, and this, of course, assumes that the loyalty of more than two million federal employees needs to be checked, it may be pointed out that for the first time an orderly procedure has been set up for hearing the cases of employees accused of disloyalty. Up till now a man could be dismissed for disloyalty without any hearing at all. The basic standard set up for judging the disloyalty of an employee is clearly sound. The order provides that an employee shall be barred or dismissed from the service when "on all the evidence, reasonable grounds exist for the belief that the person involved is disloyal to the government of the United States." Certainly no one can quarrel with that. A real effort has been made by those in the upper official brackets to see that the administration of the Loyalty Order shall not degenerate into a witch hunt. Men of very high ability and reputation have been appointed to the Loyalty Review Board. The F. B. I. has already reviewed the records of more than a million federal employees and has discovered a very small number indeed against whom any serious accusations could be brought.

Sharp criticisms have been brought against the Loyalty Order on the following grounds. First, while an orderly procedure is set up for dealing with an employee charged with disloyalty, that procedure leaves much to be desired. The accused employee has a right to be heard but he does not have a right to examine the evidence upon which the accusation rests, know who is his accuser, or cross-examine witnesses against him. It may be noted that Great Britain recently inaugurated a "purge" of the British government service, but in doing so it extended to the British public employee all the rights just mentioned which we deny to accused employees in this country. Second, while the basic standard for judging the loyalty of a federal employee is sound enough in requiring that "on all the evidence, reasonable grounds exist for the belief that the person involved is disloyal to the Government of the United States," investigators are directed to consider, in determining a man's loyalty, his "membership in, affiliation with, or sympathetic association" with "organizations designated by the Attorney General as subversive, communist, fascist," etc. Thus we assimilate into the loyalty program the principle of "guilt by association." The Attorney General has already named some ninety groups and organizations as "subversive," a job of blacklisting which was done without allowing the branded groups a hearing or opportunity to defend their reputations, and without any state-

ment of the grounds upon which the determination rested. Finally, it is urged that the net result of the loyalty program is to depress the morale of the federal service by instilling into the minds of federal employees the conviction that security of tenure depends upon thoroughly orthodox and conventional thought, speech, conduct, and associations. It creates an atmosphere of official censorship of political and economic ideas which is repugnant to the American tradition of civil liberty.

Special problems have arisen with respect to the loyalty tests which are applied to the scientists and certain other experts who are engaged in research for the government, especially upon problems concerned with atomic energy. The President's Loyalty Order does not apply to this group. Their loyalty is tested by much more rigid standards and by much more summary procedures. The loyalty of these men must, of course, be beyond all question. Little is known of the standards and procedures by which the loyalty of government scientists is being determined. Even the scientists themselves do not know. There are numerous cases in which men of well established scientific reputation, known and trusted by their colleagues for many years, have been summarily dismissed from the government service, and after as much as two years are still unable to find out what accusations were made against them. The scientists themselves are very much disturbed by this whole situation. They feel that the scientific work of the government is bound to be impaired by the withdrawal from the service of many of our best scientists who refuse to subject themselves to the risks of what they regard as humiliating and arbitrary treatment. Their concern is reflected in the recent action of the American Association for the Advancement of Science in setting up a special Committee on Civil Liberties for Scientists to inquire into and report on this whole problem.

The third phase of the federal security program is that for which Congress is responsible, and it is most spectacularly represented by the House Committee on Un-American Activities. The Committee was set up in 1938 for the purpose of investigating subversive and un-American activities in this country with a view to proposing appropriate legislation to deal with them. It has spent most of its energy "exposing" individuals and groups which its deems un-American or disloyal. It performed some useful services during the war, especially in its exposure of the German-American Bund. One or two of its early reports are workmanlike and judicious treatments of the problems dealt with. The attacks which have been directed against the Committee have been focussed less against the purposes which the Committee is supposed to serve than against its methods and procedures. I can merely mention the more important criticisms without elaborating them. First, the Committee from the beginning has been composed of politically-minded men, rather than essentially judicially-minded men bent upon discovering facts and weighing evidence fairly. Second, the Committee has consistently tried its cases in the newspapers and has sought the role of Jack-the-Giant-Killer in dealing with subversive activities, rather than the role of fair-minded men hunting for facts. This was strikingly illustrated by its three-column newspaper blast directed against Dr. Edward Condon a few months ago. Third, the Committee has never allowed those whom its accuses of disloyalty to defend themselves or attempt to refute the charges. Fourth, the charges and factual statements issued by the Committee have been proven unreliable in numerous cases. The charge against Dr. Condon quoted a letter from Mr. J. Edgar Hoover, but omitted from the quotation Mr. Hoover's statement that the F.B.I. had investigated Dr. Condon's loyalty and found him a safe risk. Fifth, the Committee's entire approach to the question of a person's loyalty or disloyalty has been governed by the principle of "guilt by association." If you ever belonged to an organization which ever had any Communists in its membership you are probably on one of the Committee's blacklists, and there is a dossier about you in the Committee's files. This is also true if you have ever signed a petition in favor of some policy of social welfare which also received the support of any Communists. Finally, the Committee has never been able to define what it or any one else means by the terms "un-American" or "subversive." Obviously those terms mean just what the persons using them read into them. And thus the Committee has been able to pin the label of disloyalty on large numbers of patriotic and distinguished persons who have advocated political and economic and social programs which the Committee, a pretty conservative group of men, disapprove. Congressman Rankin, for instance, brands as a "Communist" anyone who advocates an F.E.P.C. or a federal anti-lynching act, or the abolition of Negro segregation.

The security program of Congress is not confined to the work of the Committee on Un-American Activities. Numerous bills have been intro-

duced which are directed against Communists and the so-called Communist-front organizations. One of these, the Mundt Bill, passed the House of Representatives in May, 1948, by a very large majority. While this measure does not outlaw the Communist Party by making its existence unlawful, it does require it and any organizations designated by the Attorney General as Communist or Communist-front organizations to register with the Attorney General and file with him a list of members. Members of such organizations are forbidden to hold federal office or enjoy passport privileges, and it is unlawful for a person to be a member of such an organization if it has not registered as required by law. The bill is being seriously considered and bitterly debated. It seems highly probably that Congress will enact some kind of legislation directed against Communists.

One cannot discuss this complicated and heterogeneous collection of measures and policies established for the purpose of protecting the national security without realizing how inadequate our knowledge of them actually is. Certain obvious facts about them are, of course, a matter of record. Individual cases, such as that of Dr. Condon, get a great deal of publicity. The abuses which creep into the administration of any program or policy are always publicized. Sound and fair-minded official action has little news value and is in danger of being overlooked. The problems involved in these security measures are very important problems. They vitally concern the national security at many points, and they vitally concern our basic civil liberties at many other points. A great service would be rendered if all these measures could be carefully and dispassionately studied in an honest effort to appraise their value, expose their weaknesses, and suggest improvements in policy and procedure. Such an objective study might hope to show us ways in which we could adequately protect the national security without making such heavy inroads into the American tradition of civil liberties.

TRENDS IN THE TRADITIONAL RELATION BETWEEN MILITARY AND CIVILIAN

HAROLD SPROUT

Professor of Politics, Princeton University

(Read April 23, 1948, in the Symposium on the Relation between International Affairs and the Traditional American Scene)

A REPORT on the impact of recent international developments on traditional civilian-military relations in the United States should attempt to answer the following questions:

What are the traditional civilian attitudes toward military persons, institutions, and ideas in the United States?

Does civilian behavior today conform on the whole to these traditional attitudes, or does it deviate substantially from them?

What role does the military factor actually play in American society and statecraft?

Does the American form of government and the manner in which it operates offer reasonable assurance that *both* military *and* non-military factors will be intelligently, prudently, and effectively combined in the formation and administration of public policy?

TRADITIONAL CIVILIAN ATTITUDES

The traditional civilian attitude towards a professional military class, and the ideas such a class was traditionally assumed to represent, is one of avowed distrust.

This attitude of distrust is deeply rooted in American culture and history. To colonial America, standing armies were symbols of oppression and tryanny. Military uniforms awoke unpleasant memories of soldiers billeted in civilian homes, and of press gangs who kidnapped peaceable civilians to serve in the King's army and navy.

Numerous episodes of the American struggle for independence fostered distrust of the military. Hungry unpaid soldiers threatened to march in force on the Continental Congress. Formation of a secret veterans society, called the Order of the Cincinnati, inspired rumors of a military plot to reimpose hereditary monarchy supported by bayonets.

Hostility to a military class showed up repeatedly in the Constitutional Convention of 1787, and in the ensuing struggle for ratification of the Constitution. The same feeling flared up again during the last years of the eighteenth century. Leaders of the rising Jeffersonian Party violently attacked Federalist schemes to strengthen the army. The Federalist President and the Federalist members of Congress, they charged, wanted more troops, not to fight mythical foreign foes, but to keep down democracy at home.

The anti-military tradition found fresh adherents among the immigrants who thronged to our shores in the nineteenth century. No single influence drew these millions to America. But high among the motives, it would appear, was desire to escape the onerous burden of forced service in the conscript armies of the Old World.

The traditional attitude towards the military is still very much alive. One encounters it constantly in conversation and in the public prints. The debate over Universal Military Training is a case in point. Reasonable men can, and do, disagree as to whether this measure is either necessary or the best way to buttress the future security of the United States. There are cogent arguments on each side. But one cannot help being impressed by the number of traditional arguments used by the opponents of UMT. Some of these arguments could have come, with but slight change of phraseology, straight from the mouths of eighteenth-century American statesmen.

Consider, for example, the words of Alfred M. Landon, former Republican candidate for President: "The Army says it wants a trained and disciplined population to meet sudden attack. But a trained and disciplined population has always proven, in the end, to be the destruction of any republic." [1]

To Senator Arthur Capper, "there is a real danger . . . of UMT courses being used to indoctrinate our boys and young men with the militaristic spirit—and perhaps with the political and economic philosophies of the Administration in power—as the youth of Germany were indoctrinated under the Hitler program." [2]

[1] Quoted in *Commercial and Financial Chronicle*, Dec. 11, 1947.

[2] Quoted in *ibid.*, Feb. 12, 1948.

In the view of Senator Robert A. Taft, compulsory military training is "contrary to every American tradition. To take a boy from his home, his education, his chosen occupation, and force him to serve for a year under the direction of the Federal government is the greatest limitation of individual freedom yet proposed. It violates every principle of liberal thought. It should only be carried through if absolutely essential to the safety of our people." [3]

This conflict between military authority on the one hand and individual liberty on the other was squarely faced 160 years ago by Alexander Hamilton in the campaign for ratification of the Constitution. In words that have become classic, he reasoned:

> Safety from external danger is the most powerful director of national conduct. Even the ardent love of liberty will, after a time, give way to its dictates. The violent destruction of life and property incident to war, the continual effort and alarm attendant on a state of continual danger, will compel nations the most attached to liberty to resort for repose and security to institutions which have a tendency to destroy their civil and political rights. To be more safe, they at length become willing to run the risk of being less free. The institutions chiefly alluded to are standing armies and the correspondent appendages of military establishments.[4]

The framers of the Constitution sought to achieve security without sacrifice of freedom, by making the military subordinate to the civil government. This principle of civilian supremacy in the sphere of military policy is firmly grounded in the Constitution. Under the Constitution, power "to raise and support armies" is vested in Congress, a civilian body. "But no appropriation of money to that use shall be for longer than two years," a limitation clearly designed to prevent the army from ever acquiring an autonomous existence in American society. Congress is also empowered "to provide and maintain a navy," and "to make rules for the government and regulation of the land and naval forces." The President under the Constitution is "commander in chief" of all armed forces in the service of the United States. The power to "declare war" is vested expressly in Congress.

American civilian behavior deviates at many points from the traditional attitude towards the military. We accept an amount of professional military participation in public affairs which is equalled in few major countries today. This participation naturally rises in wartime, when external danger is great, and in periods like the present when foreign relations hover in the vaguely defined border zone between diplomacy and war.

Despite loudly voiced denunciations of militarism and reiterated warnings of the sinister effect of large-scale military participation in policy-making, relatively few Americans show any real fear of their actual military leaders. We do not banish our generals and admirals when the fighting is over, for fear they might subvert the Constitution. Instead we find places for many of them in civilian posts of honor and responsibility. The varied services which military men are performing today, and the generally high esteem in which they are held by their fellow-citizens, stand in marked contrast to the mysterious disappearance of famous Russian generals who led the Soviet armies to victory in the late war.

CIVILIAN–MILITARY RELATIONS IN WORLD WAR II

During the recent war the military gained an ascendancy never previously attained in the United States. Members of the armed services enjoyed prestige and privileges in civilian society without precedent in American experience. Civilian society itself took on numerous military attributes and characteristics. Americans in every walk of life became accustomed to authority, discipline, and regimentation, to a degree never before imposed. Never before, not even in the First World War, have the military services wielded power in American society on so vast a scale. But military dominance never became total or absolute.

The behavior of Congress was fairly typical of the home front as a whole. Congress voted funds without stint for the war effort. With misgivings, reluctance, and delay, Congress met in full the Services' demands for military manpower. There was no serious attempt to interfere with military operations. But Congress, with wide public support, resisted to the end all demands for a labor draft. And Congressional committees provided more or less searching and continuous scrutiny of the war effort on the home front.

The most crucial home-front battle was waged for control of the national economy. The Services' approach to the war rested implicitly upon the doctrine "that the military should take direct control of all elements of the economy needed for

[3] Quoted in *ibid.*, Feb. 12, 1948.
[4] From *The Federalist*, No. 8.

war, once war was declared."[5] Given the nature and scale of modern war, this would mean military rule over the whole economy.

The argument supporting this doctrine was clear-cut and, in the prevailing Service view, irrefutable. Production schedules must rest on military strategy. Military strategy could neither be entrusted nor confided to civilians. Hence the Services must fix military production schedules, and to do this effectively the military must have authority to allocate materials and manpower, and to decide what and how much could be produced for the home front.

Those opposing military control of the economy rested their case on several grounds. They were convinced that American management and labor could never achieve maximum output under military direction and discipline. They doubted whether the civilian population would tolerate without serious disturbance the spartan level of living advocated by leading Service spokesmen. They feared that military rule in wartime would fasten a totalitarian economy on the United States for all time.

No one can say how real these dangers were, because the war ended before military rule was extended over the entire home front. Civilian administrators, many of them drawn from the upper ranks of business, fought stubbornly to retain control. But they fought a losing battle. Had the war continued a few months longer at the furious pace of 1944 and early '45, the United States would have come much closer to experiencing a military-ruled totalitarian economy.

One aspect of civilian-military relations on the home front has received too little attention. That was the struggle for control of the shrinking pool of able-bodied manpower. In this struggle the needs of the armed forces collided with all home-front activities—agriculture, industry, research, higher education, etc. Agriculture wielded a sufficiently powerful club over Congress to secure liberal draft deferments for farm labor. Community sentiment impelled local draft boards to defer married men with families as long as possible. The result was a squeeze which progressively withdrew specialized workers from factories, offices, and laboratories, and took students from colleges and universities. The latter, in particular, were all but stripped of able-bodied young men over eighteen.

Many public-spirited citizens honestly believe to this day that this was as it should be. The Services wanted young men who made the best combat soldiers. Higher education was widely regarded as more or less a luxury that could be dispensed with in wartime. Besides it was neither democratic nor fair, ran the argument, to send one young man off to war, and his next-door neighbor to college.

This line of reasoning, which pervaded every level of military as well as civilian thinking, neglected and possibly jeopardized the future security of the United States. A few voices were raised in protest, but no one in high authority paid any attention. Only when the war was over did people begin to realize what had happened. This has been described in hard-hitting words by Mr. Raymond Fosdick, retiring President of the Rockefeller Foundation:

> Like any procedure which expends capital resources without providing means for replenishing them, the interruption of advanced training in the basic sciences seems to cost little at the moment, and it serves an emergency by releasing manpower. But it is a policy of desperation which places a crippling mortgage on the future. It grinds up the seed-corn of scientific progress in the next generation to make a day's feed for the war machine.
>
> The consequences of this unintelligent policy are now upon us. There is a serious, even alarming shortage of adequate personnel in almost every field which requires advanced thinking. Whether in physics or chemistry or the biological and medical sciences, the situation is the same. In subjects like bacteriology, biochemistry, anatomy, biophysics, and physiology, it is almost impossible to find younger men with adequate teaching and research qualifications.[6]

Mr. Fosdick's words were directed only to the physical and biological sciences. Results in the liberal arts were fully as disastrous. Wartime diversion of talented young men from advanced training and research in the humanities and social sciences did not produce such spectacular deficiencies. It may be difficult to calculate so precisely the hidden damage done to America's ability to provide intelligent and humane leadership in the years to come. But the shortage of high-quality younger scholars and teachers is as acute today

[5] *The United States at war, development and administration of the war program by the federal government*, 129. Prepared under the auspices of the Committee of Records of War Administration, by the War Records Section, Bureau of the Budget. Gov. Print. Off., Wash., 1946.

[6] Fosdick, R. B., *The Rockefeller Foundation: A review for 1946*, 26, N. Y., Rockefeller Foundation, 1947.

in the liberal arts as it is in the sciences. To the degree that superior leadership both in statecraft and in science and technology are elements of national strength, our wartime policy with respect to manpower did indeed "grind up the seed-corn" of the next generation.

The ultimate consequence could be the more serious, because other nations, even though more severely pressed for military manpower, followed a different policy. In both Russia and England, for example, provision was made for continued training, at least in the basic sciences. Their policies, continues Mr. Fosdick, were "guided by the long view far more effectively than with us. In Russia, students of ability in most branches of science were kept in their laboratories, while Great Britain, with some difficulty to be sure, succeeded . . . in minimizing interruption in the training of her future scientific teachers and leaders." [7]

Military and civilian leaders, and the American people as a whole, must all share responsibility for this short-sighted draft policy. The disruption of higher education, particularly at the post-graduate level, was in part the result of division of functions between military and civilian leaders, and between national and local agencies. Local draft boards cannot be blamed for failure to defer talented youths to continue their education as civilians. But the Army and Navy could have assigned men in service to the universities for uninterrupted study towards advanced degrees, just as they did assign men for short periods of undergraduate or specialized training. But so far as is known, neither the Service chiefs nor their political superiors ever gave any serious consideration to any such proposal.

Even had they done so, it seems unlikely that they would have acted any differently to conserve this vital national resource. The Services might assign one man to dangerous combat duty and another to a desk in the Pentagon, and few voices would be raised in protest. But if they had sent several thousand young men back to the universities for the duration of the war, the public outcry would have been loud and bitter. In this one respect at least, the American form of democratic government and society showed less capacity to conserve its priceless intellectual resources under the stress of total war than did either Great Britain or the Soviet Union.

Before leaving the subject of higher education, one should note certain positive achievements resulting from wartime relations with the military. The needs of the Services gave a long overdue impetus to area and language study. The necessity of achieving much in a short time stimulated experiments with new and more effective teaching methods. Also both the Army and Navy administered programs which gave a few terms of general college study to substantial groups of men in service, many of whom might never in peacetime have enjoyed any higher education at all.

The Navy's college program was designed to prepare men for officer training. In the main it conformed to good standards of liberal education. The Army, however, followed no consistent policy at all. Selection was haphazard. Assignment to college rarely enhanced a soldier's chance of winning a commission. Frequently it put him out of the running altogether. And the whole Army program was scrapped as soon as pressure for combat troops reached a certain intensity.

Administration of Service educational programs brought American colleges and universities into new relationships with the military. From beginning to end, most institutions stood in a weak bargaining position. Loss of students threatened them with financial catastrophe, with consequent dispersion of faculty and other resources. Yet despite the leverage which the armed forces thus enjoyed, they observed, on the whole, commendable restraint in their dealings with the colleges. Each institution was allowed a considerable degree of autonomy in administering its Service programs. Never, so far as is known, was pressure brought to bear on civilian teachers to indoctrinate in-service students with particular civic attitudes, beliefs, or ideologies.

More often than not, such centralized planning and direction as existed were actually, if not formally, in the hands of civilian educators loaned by the colleges to the military departments. Dictation in educational matters, where there was dictation, was more often attributable to these civilians working for the military than to the professional officers in charge.

College administrators and teachers, despite their weak bargaining position, remained strongly allergic to military dictation or pressure. This sensitivity was acute in the area of the social sciences, especially in the teaching of international relations. In that field, both the Army and the Navy desired more systematic study of the elements of national power and of the function of power in international relations. The Army implicitly and the Navy explicitly disclaimed any de-

[7] *Ibid.*, 27.

sire to promulgate militarism or any other doctrine or theory, or to dictate how the colleges should deal with these matters. But such disclaimers never completely reassured civilian college teachers. The suspicion persisted widely that the Services were covertly seeking to indoctrinate American youth with militarism, to aggrandize power politics, and to undermine faith in the possibility of building a stable international society.

In the making of foreign policy and the practice of diplomacy, the war wrought a number of significant changes in civilian-military relations. During the inter-war years, the Department of State seriously neglected the military side of foreign policy. The Department had been unwilling either to admit the military into its councils, or itself to analyze systematically the military implications of proposed lines of action. Wartime necessity compelled the State Department to pay more attention to the military factor in diplomacy. But the Department possessed neither the trained personnel nor the type of internal organization needed for such analysis.

Under these conditions other agencies inevitably moved into the vacuum—especially the Office of Strategic Services and the Joint Chiefs of Staff. The relatively high quality of strategic thinking and analysis achieved in these and certain other military branches was an important contributing cause of the wartime increase of military influence over foreign policy.

By 1944 fairly adequate liaison was functioning between the Department of State and the various military staffs. Army and Navy officers were participating in almost every high-level policy study. Military advisors accompanied the delegates and civilian staff to all of the diplomatic conferences which occurred with increasing frequency towards the close of the war. Military personnel participated actively in framing the United Nations Charter, and in other planning for the peace. High-level integration of political and military policy was achieved in some degree by the formation of a State-War-and-Navy Coordinating Committee.

In the main, the Services tried to restrict their role in policy-making to appraisal of the military aspects of international questions. Often, however, the boundary between military and political aspects is blurred. This is especially the case in wartime. There is also danger that solutions urged for strategic reasons may clash with broader conceptions of national interest.

A case in point arose with respect to the Pacific islands wrested from Japan. The Navy desired to retain many of these outposts for valid strategic reasons. Even a nominal trusteeship was opposed, lest in the future it raise questions of inspection by international authority, or otherwise limit the use to which the United States could put these islands. This stand collided with the State Department's desire to establish on the broadest possible basis the principle of international trusteeship for the government of dependent areas. It also contradicted American statements that the United States sought no territorial aggrandizement from the war. If the United States stood firmly by these principles, it would be in a stronger moral position to oppose the expansion of other powers; the Soviet Union, for example. The Navy stood firm instead. The immediate strategic interest was safeguarded in a manner which weakened in some degree the moral position of the United States and its ability to resist post-war expansion by other nations.

This and certain other straws in the wind prompted civilian observers to ask some crucial questions. Were the military services acquiring a veto against the civilian executive wherever strategic interests were concerned? Would they tend in the future to interpret complex international issues too exclusively in strategic terms? As the war drew to a close these questions still remained to be answered.

SOME CURRENT TRENDS AND IMPLICATIONS

Military personnel and military ideas have continued since the war to exert great influence on civilian thinking and national policy. The rapid physical demobilization carried out in 1946 followed the pattern of 1919. But the continued ascendancy of military influence in statecraft, three years after the end of fighting, has no precedent in American experience.

The extent and channels of direct military participation in policy-making and government administration cannot be stated with any exactness. Military persons occupy relatively more key Federal positions than ever before in peace. These include posts of great authority and influence, in the Department of State, diplomatic service, White House secretariat, and other branches of government. Military governors of occupied territories exert a continuing influence on foreign policy. American military missions in numerous foreign

countries affect national policy in ways difficult to evaluate but clearly not negligible.

Even more difficult to evaluate are the political implications arising from federation of the military services under a single Secretary of Defense. Reducing inter-Service friction would tend to increase military influence on foreign policy, and to minimize civilian influence on military policy. How much the nominal federation of the Services has actually curtailed inter-Service rivalry and friction is at least debatable. It has, however, given the military services four top civilian spokesmen in place of two.

Certain other developments in organization seem likely also to strengthen the influence of the military. One is the creation of a Central Intelligence Agency in which the military occupy a dominant position. Another is the continuation of the Joint Chiefs of Staff with a supporting administrative structure larger and more active than anything previously maintained in peace.

A third development is the strengthening of the Armed Forces Industrial College. This institution has numerous functions. It trains officers in procurement procedures, in the problems of industrial mobilization, and in the management of a war economy. But the Industrial College has on occasion engaged in public discussion of political questions as well. During April 1948, for example, its staff conducted in New York City a conference on industrial mobilization for business men. Their lectures ranged over a large field—the prospects for world peace, geopolitics, the elements of national power, Russia's military potential, Soviet foreign policy, etc., in addition to questions more directly involved in industrial mobilization.[8]

A fourth development of great significance is the establishment of the National War College. This institution provides a one-year top-level course for an annual class of about one hundred. Each class is carefully selected from Army, Navy, Air Force, *and* civilian Foreign Services officers with a background of about ten years of service. The first half of the course is focussed on American foreign policy and its integration with military policy. The second half of the course deals with more technical problems of military operations. The overall objective has been described by a Foreign-Service member of the first class to be "discovery of means for the maintenance of peace." A more accurate description would be: comprehensive analysis of all the factors affecting the security of the United States.

Mention should also be made of the recent establishment of a National Security Council. This is a coordinating body operating at a still higher level than the State-War-Navy Coordinating Committee mentioned above. In this body, the Secretary of State is a minority of one against the four Service Secretaries and a representative of another semi-military agency, the National Resources Board.

Just how this arrangement will work out in practice, it is too soon to say. Mr. Blair Bolles of the Foreign Policy Association is one of numerous critics who believe it puts the military firmly in the saddle, and makes the Secretary of Defense the dominant figure in foreign policy. Only by playing the "veto-game like Andrei Gromyko in the United Nations," Bolles contends, can the Secretary of State stand up against the "united military front."[9]

Such criticism rests upon at least two unproved premises. It assumes that formal representation and presumptive voting arrangements in interdepartmental committees will determine whether civilian or military views prevail. It assumes further that military participation and influence in policy-making is *ipso facto* dangerous to civil liberty and democracy, and prejudicial to the prospects for peace. Rarely do the critics ask what relationship between civil and military agencies is needed to insure full consideration and adequate integration of *all* relevant factors—political, economic, and moral, as well as military—in this perilous period of transition and readjustment.

It is vitally important to press this point today, in view of the prevailing temper of American public opinion. Never before have military ideas, points of view, and solutions enjoyed such peacetime vogue in the United States. Never have so many Americans seemed to accept so fatalistically the idea of another "inevitable" world war. Never before could one hear so many of his fellow-citizens offering cold-blooded proposals for "preventive" wars that would kill or maim uncounted millions in other lands in a desperate attempt to make the world safe for the United States.

The prevalence of such thinking in the United States is easier to discover than to explain. Numerous hostile critics have attributed it expressly or by implication to the influence of the military services in American society and government.

[8] As reported in the *New York Times*.

[9] Article in newspaper *PM*, March 14, 1948.

Such an explanation leaves too much unexplained. It ignores, for example, the fact that officers in positions of top-level authority and responsibility —whether in active military service or in civil government—have shown no propensity to urge extreme military solutions. It ignores further the notoriously reckless speech of certain politicians, journalists, educators, men of letters, and other civilians who urge drastic military therapy for the ills of our time.

To understand the present popular vogue of military solutions, one must probably look beyond individuals to events. The current state of mind in America plainly reflects panic, often bordering on hysteria. Americans for the first time in our history are really frightened as they look into the future. In a characteristically American way, they are casting about desperately for a panacea, and "preventive war" and other military solutions look to many people like the most promising medicines in the cabinet.

The trend of Soviet-American relations, in the setting of world disorganization, is disquieting from any point of view. The creeping advance of revolutionary communism, its insidious growth in our own society, and the mental image of American cities one day bombed to smoking rubble, are enough to unnerve the staunchest character. The vistas thus opened up can be morally devastating to minds long habituated to the comforting isolationist thesis that "it can't happen here."

Under these conditions there is constant and very real danger that Americans will put too much faith in military ideas and solutions. Military power has an important role to play in bringing order out of the present dangerous chaos. It is a role for which there seems to be no adequate substitute. But there is little ground for hope that military power alone can save us from a third world war. There is even less ground for hope that military power can save even the victor from frightful devastation, if there is another world war.

The central problem of civilian-military relations in the making of foreign policy today is to strike a balance between firmness and conciliation, between holding the line and rebuilding a world in ruins. This is a task which requires skillful use of *all* the tools of statecraft—not just military tools. Moral leadership and persuasion, economic inducements and pressures, as well as display of armed force and military coercion, all must be combined in the most effective proportions. Only thus can the United States, while holding in check the forces of aggression, play a constructive role in rebuilding a viable world society.

R. A. F. PENROSE, JR., MEMORIAL LECTURE

AN ATTEMPT AT PERSPECTIVE

ROBERT B. WARREN

Professor of Economics, Institute for Advanced Study

(*Read April 22, 1948*)

ALL of us, I suppose, in our historical reading, have at times contrasted what is called the logic of history with our contemporary bewilderment. After a sufficient lapse of time, the issues of any given period assume a clarity of perspective not vouchsafed to contemporaries. In this perspective, right and wrong, progress and reaction, are as clear as black and white. But in current events, while we are all of us eager to be on the side of the angels, our eyes, like those of Elisha's servant, are holden and we are quite uncertain as to which side the angels are on.

In these circumstances, it seemed to me that something might be gained by an attempt to transpose ourselves in time and try to look at the present in a kind of retrospect. This involves an interpretation of the immediate historical past, and some comments on the present in terms of the interpretation. This is a hazardous undertaking; such interpretations are limited by the ignorance and bias of the interpreter; of necessity they assume distortion by reason of selection and omission, and they are extremely subjective. Any period may be given half a dozen different interpretations, leading to diverse conclusions. It is not my intent to argue a thesis; it is my hope that such an attempt at perspective may suggest lines of thought which your own minds can pursue.

Time is, of course, the subject matter of history; but time itself, in the historical sense, is only partly a matter of clocks and calendars. Past, present, and future are inextricably interwoven. It may be said that the present scarcely exists in itself. In our own lives today is half shaped by yesterday, half by tomorrow. The present is born of a past which can only be understood in terms of a present already under the influence of an unfolding future. Even ancient history has to be rewritten with every generation, not because new facts have been discovered, but because old facts acquire new relevance. To understand the present, it seems worth while from time to time to attempt to appraise those forces from the past that may have determined its character, and to try to sense those unclearly perceived forces that already are shaping the future.

Chronologically, history is a continuity; actually it is marked by discontinuities, each linked to, but not proceeding directly from, its predecessor. All of us are familiar with those neat hyphens with which historians divide the syllables of recorded time—Classical Antiquity, the Dark Ages, the Middle Ages, the modern period. But time was when antiquity was modern and presumably time will be when our age will have become antiquity. The inference in unmistakable. Modern times, too, are finite; not in the sense that they must terminate in a *Dies Irae,* but that they must at some era become the old order giving way to the new.

These periods all lie within the continuity of a single civilization and a single geographical area. Yet they are quite distinct from each other. Each has its characteristic political forms, social structures, economic institutions, and moral principles governing human relations—the relations of man to man, the individual to society, and group to group. This complex of arrangements is the established order; and it is characteristic of these periods that in its day each shall have seemed ultimate. In the ordered periods of history the ends of society are recognized and acknowledged; the dispute relates to means. In transitional phases the very nature and end of man and society are in doubt; social reason is alternately tossed between hope and despair. But a time comes when the new order is born, not without travail.

While these boundaries between historical periods are not indisputably marked, I shall present one on the authority of Lord Acton: "Next to the discovery of the New World, the recovery of the ancient world is the second landmark that divides us from the middle ages, and marks the transition to modern life."

The last half of the fifteenth century saw in the fall of Constantinople the end of the Roman Empire, and following it in quick succession the discovery of America and of the sea route to Asia,

and, with the liberation of the Principality of Muscovy from Tartar rule, the foundation of independent Russia. Such momentous events are landmarks in history, and they can lay claim to having set in motion the forces that shaped the ensuing four centuries.

But it is conceivable that these forces are in process of supercession by newer forces of a different character. If the fifteenth century marked the end of one historic epoch and the beginning of another, I suggest that the twentieth century stands at the end of one epoch and at the beginning of another whose determining forces are as yet dim and confusing.

The fifteenth century, which seems to us the dawn of a new day, seemed to its contemporaries a deepening twilight. At the opening of the century Western Europe was—as it is today—the small peninsula at the tip of the great Eurasian land mass. The political divisions of today were already partly formed; two common historical experiences—the memory of Rome and the common adventure of the Crusades—had already welded them into what Gibbon called "The Republic of Europe."

But the Crusades themselves, that great military alliance of Europe against Asia, had ended in failure, and Asia had returned to the offensive. In the east what is now Russia was still subject to the Mongolian Tartars who, as late as the mid-century, were again to overrun Poland. In the southeast the Ottoman Turks had swept through the Balkans and were about to threaten Vienna; in the southwest the Moors still clung tenaciously to southern Spain. The unity of Christendom that had been one of the glories of the Middle Ages had been rent by the Great Schism, with half Europe professing allegiance to a pope at Avignon, half to a pope at Rome. Christendom itself had lost its hold in Africa and in Asia, and was shrinking in Europe itself.

The flame of learning, which had briefly flared up in the thirteenth century largely under the influence of scholars, Jewish and Arabic, from the Moorish universities in Spain, had, as Gibbon says, died down to a feeble flicker. The courts of Europe were surpassed in wealth, strength, and culture by the capitals of Islam, and these in turn were equalled or excelled by those of India and China. Small wonder that the author of the *Nuremburg Chronicle*, issued in the summer following Columbus's return from his first voyage, but before the news had reached northern Europe, left at the end of his volume a scant half dozen blank pages wherein the reader might complete the short and simple annals remaining to humanity. This may stand as a perpetual warning to the temerity of historical interpretation.

It was on this somber and distracted continent, brutalized by poverty and ravaged by disease, spiritually divided within, and beset by foes without, that the impact of the Great Discoveries fell. And the Great Discoveries themselves derived from what had seemed a crushing disaster, for the Turkish conquests had driven to Europe the scholars who were to discover for Europe the ancient world; the barricade of the overland routes to Asia had, so to speak, driven Europe into the ocean and compelled it to discover, simultaneously, the sea routes to Asia, and the New World itself. Following the same clue to the other end of the map, the niece of the last Christian emperor of Constantinople had married Ivan, Prince of Muscovy, who by defeating the Tartars—about the time that Columbus first began pressing his great design upon the King of Portugal—laid the foundation of Russian independence.

The immediate consequences of the geographical discoveries are so familiar as scarcely to need recollection. First of all, the realm of Christendom was enlarged. For seven centuries the geographical limits of Christianity had been steadily compressed by the Moslems. In that time they had seized and converted western Asia, northern Africa, and southeastern Europe. It is estimated that at the time of the discoveries Mohammedan peoples outnumbered Christians five to one. The discoveries added a hemisphere to the area of Christendom; equally important, it was the wealth drawn from the New World that enabled Spain a century later to inflict upon the Turkish power at Lepanto the defeat that decided even the survival of Christianity in Europe.

Second, the discoveries initiated the age of European world supremacy. From time immemorial, in the innumerable contests between Asia and Europe, Europe had rarely been able to do better than to defend itself. For one Alexander who had carried European arms into Asia, one could name Attila, Genghis, and the followers of Mohammed who had successively invaded Europe. For the four centuries following the discoveries Europe was to be the undisputed master of Asia; for three centuries of America; and still of Africa. Third, the treasures of Mexico and Peru provided Europe with the stock of monetary gold and silver

that determined that pecuniary capital rather than land was to shape the development of western economy.

No less significant for the course of European civilization was the rediscovery of antiquity. As the Great Discoveries had widened geographical horizons, so the rediscovery of antiquity widened intellectual and spiritual horizons. Europe rediscovered what Thales of Miletus had learned two millennia before—the existence of a natural universe governed by discoverable laws. By learning the predictability of eclipses from the Chaldeans (to whom it was ancient lore but who had never recognized its general implications) Thales was the creator of ancient science; so the rediscovery of the natural universe was the source of the illimitable body of modern science. While the response of the European mind to the physical sciences was more immediate, its ultimate response extended to the area of human relations.

Let us cite a single and familiar instance. Apart from ecclesiastical history, the historical thought of the Middle Ages had been concentrated on the tradition of Imperial Rome; and this tradition exercised a powerful influence upon political ideals. The rediscovery of antiquity recalled to the world the Greek democracy and the Roman Republic. All through the eighteenth century political idealism was phrased in the nomenclature of the Roman Republic; Brutus had replaced Caesar as the hero; and the theory of the Universal State represented by the Holy Roman Empire seemed less desirable than the republican particularism of its more ancient predecessors.

As we look back, therefore, at the world as it developed over the past four hundred years, it seems at least arguable that its major distinguishing characteristics may be traced directly to the Great Discoveries or to forces set in motion by them. I have enumerated four—that Christianity rather than Islam was the characteristic religion; that the political hegemony of the world passed from Asia to Europe and specifically to those nations which, later to be known at the Great Powers, were called by Gibbon "the Republic of Europe"; that in these centuries wealth which from time immemorial had characteristically been in the form of land, was to assume the form of pecuniary capital; and last that there was a reorientation of the major channel of intellectual activity. In antiquity intellectual activity had been concentrated upon philosophy; in the Middle Ages, it was preoccupied with theology; but in the post-discovery period it was to direct itself with incredible vigor and astounding success upon the more material sciences. One could sum up three of these as the ascendancy of Europe, the ascendancy of individual reason over traditional authority, and the ascendancy of the material over the metaphysical. The Europe of this supremacy included not the entire continent, but that part which Gibbon had called the "Republic of Europe"—the western extremity of the continent. This supremacy involved military domination but it was not distinguished by military force. Its hegemony was rather characterized by a cultural ascendancy. Its political forms, its economic institutions, its intellectual propensities, its cultural standards were not imposed on the world; they were copied or emulated by the world. They were accepted as "civilization."

Of these elements of civilization, none was so widely accepted as its economic institutions. The world unity which culminated in the nineteenth century was an economic rather than political or spiritual unity. The focus of the Roman world had been the municipal altar of the Divine Emperor; the focus of the medieval world had been the Church; the focus of the age of European supremacy was the market place. The preceding age had been engrossed in its concern for the salvation of the immortal soul; the more recent period has been engrossed with concern for the mortal body. The earlier age had been solicitous for spiritual welfare; the more recent, for earthly welfare. The earlier age had been religious; the latter, materialistic; and, if we harshly qualify the earlier age as one of superstitious religion, we must in candor ask if some subsequent period may not describe our own period as one of superstitious materialism.

Within its range this cultural domination was absolute. European thought—religious, political, economic, scientific—penetrated and to a surprising degree permeated the older continents of Asia and Africa. In those four centuries not one idea from Asia or Africa, not one Asiatic or African mind exerted the slightest perceptible influence upon European thought or European institutions. When one contrasts this with previous periods, this intellectual parochialism is little short of astounding. We all remember that our intellectual beginnings trace back to Ionia, and our ethical origins to Syria and more remotely to Egypt. We recall the fluidity of intellectual activity in the Roman Empire when the Elder Pliny could quote a popular proverb that new ideas were always arriving from Africa, and that sturdy reactionary, Juvenal, could complain that the Orontes was flow-

ing into the Tiber. We can even move down a thousand years and recall that the badge of intellectual distinction, the academic gown and hood, is but the *burnous* of the Bedouin, borrowed to demonstrate quondam association with the intellectual élite.

But what of the New World itself? Obviously, the most conspicuous result of the discoveries was America. To raise the question "What difference has America made?" is to suggest the impossibility of a brief and conclusive answer. But since this is no more than an attempt at perspective, I shall offer one for your consideration. It is not *the* answer to the question; it is only one answer.

Those of you who have read Samuel Morison's *Admiral of the Ocean Sea* cannot fail to have reflected how strangely the character of Columbus himself foreshadowed the characteristics of the America that was to be—his personal ambition, his stubborn egotism, his pragmatic devotion to science, his preoccupation with material wealth, his superb leadership in peril and his dubious capacity to govern in tranquility, and above all his belief in an ultimate purpose, his faith in the prophetic significance of his name—that he was a vessel of the Lord, chosen to extend His kingdom on earth. Every one of these curious and conflicting traits in the personality of Columbus can be followed in the history of America. Of these traits I shall follow two—his piety and his desire for wealth.

The immediate successors of Columbus magnified these traits. The priest marched with the conquistador, and, in the succeeding migrations over four centuries the two types have been typical —the pilgrim who came from religious motives and the man who came to get rich quick. Both types are characteristic, and both, in my opinion, have impressed their character on America, and through America, upon the world.

The Europe of the fifteenth century was, as we have said, a dark, menaced and distracted continent; but it was devoutly religious. To the spiritual minded, the discovery itself was a miracle—the fulfillment of prophecy. A new world had been found in which humanity could start fresh and, with the aid of religion, recreate the hopes of original Eden. Small wonder that within a few years More had written his *Utopia*—the beginning of a long series of dreams of a perfect society. From the first, the New World was a promised land—and in that age perfection in society was conceived less in material than in spiritual terms.

We are familiar with the theocratic ideals that dominated the settlement of New England. But we are prone to forget that all of the early settlements by whatever colonizing nation were charged with theocracy, and most of them scarcely less so than New England. The Inquisition accompanied the earliest Spanish migrations; the ill-fated colony of French Huguenots established by Admiral Coligny was Calvinistic; we need only mention the Roman Catholic settlement of Maryland, and in this city we need not advert to its own foundations. To the north, Quebec was from its establishment guided by Jesuits—and even today Quebec retains many of the aspects of a theocracy. The most complete theocratic colony was that of the Jesuits in what is now Paraguay. Various as these instances were, they had one common ideal. Here in this New World redeemed humanity was to find its earthly salvation. We, who are children of another age and with other measures of social value, can find much to criticize and not a little to deride in their fervent dreams. For them, America was a *tabula intacta*. We have seen what four centuries have written on that page, and know that, for good and evil, it bears little resemblance to the vision of Las Casas or Cotton Mather or William Penn or Father Jogues. These, when they had served their generation, fell on sleep, but their works have followed them.

We have, I fear, fallen greatly short of the dreams of the Great Discoverers; we have not founded the City of God nor the Communion of Saints nor a Society of Friends, as they might severally have described their hopes. We have disappointed them, but I think we can claim we have not entirely betrayed them.

What, then, has been the spiritual contribution of the man who came to the New World to get rich quick?

In the Europe of the fifteenth century the relations of man to man were cast in an ancient and rigid form—so ancient and so rigid that it seemed immutable. From top to bottom, from king to peasant, the relation of every man to every other man was strictly graduated and this scale of graduation provided a structure of society more complex, equally inclusive and scarcely more unyielding than the caste system of India. Society could not conceive a structure lacking this prescribed formalization of immutable relations between man and man. In this graduated society social rank, political power, and economic wealth were in perfect equation, for all were identified with a single quality—status. Status could be

acquired in only two ways—by the direct grace of God through birth or by the grace of a king ruling by divine right. Into his status a man was born; in it he lived; and on his death transmitted it, neither degraded nor uplifted, to his children. This structure was attributed to God Himself:

> God made them high and lowly
> And ordered their estate.

This structure required that status reflect an equation of political power, social rank, and economic wealth, attainable only by birth or the gift of the monarch. If an individual could, without the grace of birth or the whim of the monarch, attain any one of them, the whole social structure, as Shakespeare says, was "shaked."

From the first, America was a place where any man might and many men did get rich quick. Columbus, the wool-comber's son, died wealthy. Cortez was born poor; Pizarro was a swine-herding peasant. In America both acquired wealth that rivalled that of the most affluent grandee of Spain. And they were but forerunners of an innumerable legion of those who were to seek and find in the New World the fortune that the Old World denied them. The two upright columns representing the Pillars of Hercules, with their wreathing motto *"ne plus ultra,"* had long been the symbol of the limitations of the Old World. There is something fantastically appropriate in the fact that its formalization in the dollar sign should have become the recognized symbol of the New World. Of course, for every conquistador who became rich, a score perished miserably; for every immigrant who made a fortune, a dozen died in the ditch or on the railway embankment or in the city slum. But enough, as the saying goes, "bettered themselves" to attract newcomers into the breach. And there was always the hope, if not for themselves, for their children; this hope was the individual's revolt against the traditional order.

But there was a still more subtle way in which America was to destroy the fabric of pre-discovery society. The basis of that minutely graduated social structure was the ownership of land; and it was the relation of man to land that determined his status in degree and relation to his fellow man. So interwoven was the relation of land to society that land rarely changed possession save by the processes of society.

There was only one treasure of the Incas, but the land of the New World seemed illimitable. In Europe land could be acquired only by marriage or inheritance; in America land could be had for the asking or, if the request were refused, for the mere taking. Land had been associated not merely with wealth but with social status. In the New World even a "sturdy beggar" could acquire the symbol of a status hitherto associated with nobility and gentry. Land could not confer wealth, but it could depreciate the status value of land ownership, and reduce land to its economic value. On this plane it came into competition, and handicapped competition, with the new pecuniary wealth available to acquisitive plebeians.

This undermining of the conceptual basis of society did not make men equal, but it made them for the first time equally free to demonstrate individual inequality, and in both a spiritual and a material sense we can see that the depreciation of status afforded a release of energy both in the economic and political world.

It may at first seem strange that I have listed this extremely materialistic phenomenon as a spiritual force in the relation of man to man. But so I think, it was. In the medieval world the church might proclaim the brotherhood of man as a logical corollary of the fatherhood of God; but in the society of status this corollary was itself a contradiction. Religion might affirm that all souls were equally precious in the sight of God, but under the canons of a society of status they could not be equally dear in the sight of each other. The familiar anecdote of the French noble who, threatened with the terrors of the hereafter, consoled himself by remarking that God would think twice before damning a person of quality may be apocryphal; but archeology has shown that from the earliest periods of Egypt man living under the society of status has hoped or feared that his worldly status would be carried beyond death—so strong has been its social force.

Only with the elimination of status from the conceptual structure of human society could the way be cleared for the spiritual ideal of the brotherhood of man. This was the New World's contribution to civilization. It was not the gift of philosophers or statesmen or conquerors. It was not even the gift of theologians. It was the gift of the New World itself, to itself, and to Europe. And it was a gift not too unworthy of those devoted souls who, still awe-struck by the miracle of a New World, had hoped so faithfully and prayed so fervently for its future.

Let us now turn to the other of our two archetypes—the pietist. For over a century the American child was systematically taught to feel an acute

and sympathetic concern for the people in other countries—particularly Asia. From infancy he shared his few pennies with these people. I refer, of course, to the emphasis upon foreign missions in American churches and, especially in Sunday schools. The poorest church felt a sense of personal participation in the work, not merely of missions in general, but of some particular missionary. As far as I know, this was a system of indoctrination in foreign affairs still without parallel in a century that prides itself upon its techniques of indoctrination and propaganda.

In this period of alleged isolationism, American missionaries ranged from "Greenland's icy mountains to India's coral strand"; there was no speech nor language where their voice was not heard. Their line went out through all the earth, and their words to the end of the world.

Now, if one measures the influences of American missionaries, as followers of the Great Discoverers, in terms of their additions to the particular sects that sent them forth, those influences were fairly modest. But that is not the full measure of their influence. Wherever the American missionary went, he took with him a little museum of American life. The American life has always placed a unique emphasis on education, and to this was usually added an emphasis upon health; but above all, the American missionary took with him his attitude toward the relation of man to man. In this attitude the ancient idea of status played no part. From the first, the very spaciousness of America had been inimical to the concept, and, by the time American missions began, the concept of status was completely alien. Yet Asiatic society was itself a society of status, and the very foundations of colonial imperialism rested on the superior status of the European. Very much as we have described the impact of the discovery of antiquity upon the European world, with its emphasis upon reason as distinct from tradition, so the American missionary made his impact upon the older civilization of Asia. He was the bringer of the new wine that was to burst the old bottles. His baptisms were few, his conversions many.

I do not mean to imply that there were no missionaries but Americans, nor that missionaries were the sole agents of the dissemination of western ideas in Asia. I do mean to affirm that, in the immense drama of the meeting of Europe and Asia that followed the Great Discoveries, America in its own way played the role of a Great Power, and to remind you of this role in a period that is inclined to ignore activities conducted without military pomp or diplomatic circumstance. In the awakening of Asia, America played a part not unequal to that of the so-called great colonial empires, and our representatives, obscure and simple as they were, in the end exerted an influence not inferior to that of viceroys and proconsuls.

Let us now summarize our list of those elements of modern times which are clearly recognizable as distinguishing the period from the preceding age, and as being of fundamental significance. I have listed four: the expansion of Christianity after a period of contraction; the ascendancy of Western Europe, after a period of submergence; the ascendancy of individual reason against traditional authority; and the elimination of hereditary status as the basis of social relations.

But, as we said earlier, if one accepts the idea that a period of history has a recognizable beginning, the inescapable inference is that it has an end. The powerful forces released by the Great Discoveries would, in the end, lose their momentum. Some would presumably exhaust their vigor; others would contain within themselves the germs of their own disintegration. Still others would be superceded by new forces. We must also try to differentiate between those forces of change which are more or less continuously present; and those large enough to cause major discontinuities in history. It is my opinion that we have reached the end of the period which opened with the Great Discoveries.

First, I remarked that the Great Discoveries initiated an expansion of the geographical area of Christianity. Christianity did not regain the areas that it had lost in North Africa and hither Asia, but it more than compensated for these losses by its extension into the Americas. Almost simultaneously the liberation of Muscovy from the Tartars eliminated the possibility that the entire region of the Eastern Church would become Moslem. Subsequently the eastward and southward expansion of Russia added to Eastern Christianity areas in extent approximately equal to those of the two Americas. A religious map of the world at the end of the nineteenth century would have shown its land masses predominantly Christian; the conspicuous exceptions would have been the continent of Africa, and the southern and eastern coasts of Asia.

I do not mean that the area of Christianity was in any sense a City of God. It was an area in which certain principles of ethical conduct which

we call Christian were generally taught, and able to command some degree of common assent.

The abrupt secession of Russia has completely altered this map. The territories controlled by the Soviet Union which are substantially co-terminous with the former areas of the Eastern Church, can no longer be mapped as Christian. Within those territories the Christian religion, in various forms, may still be tolerated and practiced, but it no longer represents the prevailing form of ethical belief and instruction.

Almost simultaneously there has been a notable revival of Islam. From the seventh to the sixteenth centuries the Moslem religion expanded with extraordinary rapidity. But from that period to the beginning of the present century it made no further territorial gains, while the wealth and political importance of its adherents steadily diminished. Just prior to the First World War, of the numerous Moslem states stretching from the Atlantic to the Himalayas, none—with the exception of Turkey and the possible exception of Afghanistan—could be described as a sovereign political unit. The Turkish Empire was destroyed and today, after the changes introduced by Moustapha Kemal, it is somewhat doubtful if Turkey may be classed as a Moslem state. As Christianity had waxed during the period following the discoveries, Islam had waned. In our days the boundaries of Christianity have been contracted; but, while the geographical boundaries of Islam have not increased, its 200,000,000 of adherents have awakened from their long lethargy. Still divided into numerous small and feeble states, it has assumed enough political shape to enable a number of them to be recognized for admission to the United Nations. At the same time the area of Islam, formerly regarded as one of the regions of the earth least favored with natural wealth, has been discovered to be rich in mineral resources. In short, Islam, which was an inconsiderable religious, economic, and political factor for three hundred years, must now be recognized as again capable of a considerable role in history. The relative positions of Islam and Christianity have materially changed in our lifetime.

Second, the period of the world supremacy of the Republic of Europe has closed. In part, this loss of supremacy is absolute. The Republic of Europe was devastated by two internecine wars; and economically weakened by the revolt of Asia. But the major loss of supremacy is relative. Europe has diminished because other parts of the world have grown. It occupies but a tiny fraction of the earth's surface, and its inhabitants but a small fraction of the earth's population. The ascendancy of Europe was not so much an evidence of power as it was of cultural and moral hegemony. Its social, political, and economic forms were identified with civilization itself, and other nations aspired to follow those patterns. But the very fact that they did so implied that sooner or later size and numbers would assert themselves.

To Gibbon the Republic of Europe was a cultural concept. In the century that followed him it became as well an economic concept. But it never assumed a political form consonant with its cultural and economic unity. Its political form was frozen at the time of the Great Discoveries. This form was that of the sovereign nation-state; and in the nineteenth century nationalism became in Europe a force which Gibbon never foresaw. The notion of the ethnic or linguistic political unit, the sovereign nation-state, so characteristic of the age following the Great Discoveries, reached its zenith in the Treaty of Versailles.

It is not characteristic of the political units that have arisen since or currently appear to be rising. The idea of ethnic adoption (naturalization) is scarcely older than the United States. The evolution of the British Empire into the Commonwealth is an example of recent types. But in the immediate present the most conspicuous example of a new pattern is what we call Russia, and what calls itself the Union of Soviet Socialist Republics. This latter is an awkward but descriptive term. It is not an ethnic unit, but a grouping of units marked by specific political and economic institutions. While it refers to itself as a Union of Republics, it could, I think, be termed in the singular a republic, as Gibbon used the term Republic of Europe—to express a cultural unit having common political, social, and economic institutions.

In the same way the recently formed Dominion of India is not an ethnic nation-state; it is rather a cultural union having certain common elements —of which community of language or nationality is clearly not one—combined in a political union. The world of Islam, while composed of ethnic nation-states, with various forms, and in various stages of development, is united not merely by religion but by numerous other cultural bonds. While Islam has not yet taken a unitary political form, it is showing some propensity to act as a political unit. In our own hemisphere, while South America is divided into nation-states, the very expression "Latin America" is evidence that

underlying the traditional nation-state pattern there is a cultural unity at least potentially capable of acting as a political union.

In short, the notion of the ethnic or linguistic nation-state, devised in the period immediately before the Great Discoveries, and characteristic of the political thought of the subsequent period (except as modified by imperialism), seems now to be in the process of supersession by the concept of cultural groupings, usually geographically contiguous, composed of non-identical ethnic and linguistic units, but bound by a common culture. These units are relatively large, are characteristically separated by major natural obstacles, but homogeneous in the sense of having a real community of political habits, social attitudes, religious preferences, historical, traditions, and economic relations. In this kind of world, Europe, still frozen in the political forms of the fifteenth century, seems anachronistic; but even Europe appears to be moving toward translating Gibbon's noble phrase into some form of political reality.

But even if the Republic of Europe is a continuing fact, whether in political or merely cultural form, it is beyond doubt that its supremacy—the outstanding fact of the recent past—is ended; and that another chapter that opened with the Great Discoveries has definitely closed.

So far, in describing the changed condition of the world, we have given our attention to formal aspects of human relations. Now we must give some thought to a subject which is basic to these organized relations—namely, the numbers of humanity itself, and the relation of these numbers to the world's land. It is impossible to state with any accuracy the world's population, or even the population of Europe, at the time of the Great Discoveries. The Black Death of the fourteenth century had certainly reduced the population of Europe greatly, and it is unlikely that by the end of the next century this loss had been entirely regained. However, there is reason to suppose that, following the discoveries, a new growth began. The earliest estimates to which any credence can be given surmise that about the time of the Jamestown Settlement, or about the time the Russians were first pushing across the Urals, the population of the earth may have been four or five hundred millions. Then, until the beginning of the last century, increase was relatively rapid—perhaps doubling in two hundred years. In the past century it has been extremely rapid; the current figure is put at above two billions with an increase of about one per cent a year, but quite unevenly distributed. In this whole period the answer to the increasing demand for food was new land—land previously inhabited only by sparse nomadic or hunting peoples. These lands lay first of all in the Americas, second in southern Russia, third in Siberia, and last in Manchuria. In the absence of data one might hazard the guess that the land under cultivation had, since the discoveries, increased in something like the same proportions as the population—four or five times. The productivity of this land has been subject to depletion, principally by erosion, and to increase by technology. But, in the main, as population increased, food supply was increased by the simple breaking of new land.

That expedient is no longer available. Here and there, small areas may be added by drainage or irrigation, but at substantial cost. Other areas, of problematical size, now considered marginal or submarginal, may be added, but at marginal costs. It is not beyond imagination that world crop acreage is now close to its foreseeable maximum, with depletion approximately offsetting marginal increments. How man will meet this basic problem of his daily bread offers a wide field for speculation. But one thing seems certain—he is no longer able to rely upon the familiar expedient of occupying empty land. It is clear that another chapter which opened with the Great Discoveries has drawn to a close.

The three examples of fundamental changes which I have just mentioned are in the nature of observed facts. The three I am about to discuss are in the dim area of social metaphysics; and for that very reason closer to our personal lives. The first relates to our theory of social structures; the second to the relation of the individual to society; and third, the nature of authority as represented by the contemporary state. These are ancient and recurring problems. They were old when Plato discussed them in the *Republic*.

The first involves the paradox of man's equality and inequality. Socially speaking, the doctrine of equality is manifestly limited. A social structure is by definition hierarchical or graduated functionally. These gradations may take various forms and be rationalized in all sorts of ways, but a viable structure requires that these gradations be generally accepted.

We have remarked that the social structure of pre-Columbian society rested on hereditary status, and that this concept was undermined by the consequences of the discoveries. The elimination

of status did not occur abruptly, and indeed, its elimination is incomplete even in America. Our Negro "problem" is evidence of that. Nevertheless, its undermining was recognized within a century of the discovery, and thoughtful attitude followed two divergent streams.

One view held that the elimination of status was the precursor of the brotherhood of man. This found its expression in the Declaration of Independence and still more precisely in the motto of the French Revolution: "Liberty, Equality, Fraternity." It became that part of the American dream incarnated by Jefferson and Lincoln. This equality was equality before the law, and equality to demonstrate inequality of ability or achievement. To use a familiar term, it supposed social differentiation and gradation by merit rather than by seniority or "pull." But, while status could be definitely identified by accepted protocols, "merit" is, itself, a term without definition.

The diverging view found early expression. Scarcely more than a century after the discoveries, when the leaven was only beginning to work, it was clearly stated by Shakespeare's Ulysses:

> Take but degree away, untune that string,
> And hark! what discord follows; each thing meets
> In mere oppugnancy. . . .
> Force should be right; or rather, right and wrong—
> Between whose endless jar justice resides—
> Should lose their names, and so should justice too.

Neither the promise nor the threat was fulfilled in the period under our consideration. Hereditary status was eliminated from the structure of society; it has not been replaced with a brotherhood of man, nor with "Liberty, Equality, Fraternity." And in a society which abjured rank but in which gradations were characteristically marked by inequalities of wealth or income the perplexities of measuring merit in money have proved baffling. Further, in the society of status, wealth and power, and with them their functional social responsibility, were in the same hands. Our society has its gradations of wealth and power; but wealth, with its responsibilities, is in the hands of one group, and power, with its responsibilities, is in the hands of another group. Wealth and power, as Shakespeare said, meet "in mere oppugnancy" in the class struggle. The class struggle was not a conspicuous feature of the recent past; it is an outstanding feature of the present. The very term indicates the extent to which society has lost faith in reason, and would substitute force as the arbiter of social relations.

Conceivably, as a consequence of the class struggle, a given social structure could be destroyed (as the status structure was destroyed), and imaginably a new structure of complete pecuniary equality could replace it. But there would still be gradation of power attended with the perquisites of power. The basic problem would remain, for it is a problem which, in the end, is beyond solution by force. Yet solution by reason, or even by a rationalization of general acceptability, seems beyond the capacity of contemporary thought.

The second problem involves man's innate dualism. He is endowed with free will and personal moral responsibility. He is also a member of society. Here is a conflict of ultimate loyalties.

As we have said, one aspect of the period just past was the revolt against tradition and traditional authority. In their place was substituted an immense magnification of individual reason. The exhilarating effects of this liberation on the human mind are too well known to require elaboration. The remarkable triumphs of the mind of man over the material universe have obscured more ambiguous developments elsewhere.

The glorification of human reason reached its zenith in the enlightenment of the eighteenth century when it was virtually deified by the intellectual world. This international cult was destroyed by the act that was to symbolize its final sanctification as a religion. The bizarre ceremony of the enthronement of the Goddess of Reason in the Cathedral of Notre Dame demonstrated that reason might in the last analysis be nothing but personal opinion; and in this instance the personal opinion of a man who was the personification of naked and ruthless force. One consequence was a decline in the acceptance of the doctrine of natural law which had been so influential a force in the two preceding centuries.

The triumphs of the intellect in the areas of scientific materialism for more than a century maintained the flame of faith, and it is only in our own times that we have seen the rise of the revolt against individual reason and a return to authoritarianism, or, alternatively, a determinism approaching the fatalistic. This attitude distinctly differentiates the present from the immediate past. The recent period glorified the self-made man—the man who could triumph over his social environment. Contemporary attitudes belittle the individual; they hold that man from his birth is so conditioned by pre-natal influences and environmental circumstances that, as an individual,

he is totally irresponsible. We are even in the process of socializing sin, for the "sins of society" weigh upon us so heavily that, whatever the individual does, he is "more sinned against than sinning." We are long past the period when school boys declaimed that they were masters of their fate and captains of their souls.

Going to this extreme, we are robbing man of his only claim to humanity—that he has eaten of the tree of the knowledge of good and evil, and that he cannot escape responsibility. The jingling dogma "to understand is to excuse" may be commendable if we apply it with reference to our neighbors; it is fatal if we apply it to ourselves. In this paper I have been so preoccupied with descriptions of what appear to me to be pervasive influences, that I fear I may have given the impression that man is a mere creature of determinisms—a chip of wood swept along in the torrent of time. Columbus did not drift to the New World; he sailed there in spite of his poverty, in spite of the opposition of the learned, in spite of his reluctant and mutinous followers. The men who in this city established a *novus ordo seclorum* were not mere creatures of circumstance, but agents of ultimate purpose. They knew their weakness, but they acknowledged their strength of personal responsibilty: "Let us raise a standard to which the wise and honest can repair. The issue is with God." We are not only the heirs of the ages; we too are "founding fathers." Life on a frontier has never been easy.

Third, man, as a member of organized society, is involved in a complex of civic relationships. The relation of the economic pattern to the individual as well as to the other agencies of society (such as the state), i. e., the position of the state in society, is clearly not now what it was in the recent past.

With the changes of the position of the state in society have come changes in the relations between the individual and the state.

In comparison with the recent past, man, the individual, has shrunk in his own esteem and, as he has diminished in his own eyes, he has sought the protection of a superior being, the representative of the authority he no longer finds within himself.

Professor Toynbee has somewhere remarked that, throughout history, society has shown its propensity to deify its characteristic aspects—that is, to make gods in its own image. It appears that contemporary society may be in the process of deifying itself in the form of temporal power. We have long been accustomed to refer to certain expressions of this new cult as secular religions. We are slow to recognize how widely and rapidly the new gospel has spread—that they are only extreme cults of a diffused secular religion. The new authoritarianism takes extremely diverse forms in different parts of the world, as would be expected from the diversity of cultures. But these varied forms have already disclosed a sufficient number of common elements to indicate an underlying homogeneity. In each, the national society is regarded as an organic entity. This organic entity is believed to be primarily or exclusively materialistic. It is endowed with a common mind and a single will, which are incarnated in the state. Whereas formerly the state was only one of the agencies through which society expressed itself, it now purports to be society itself, and its mind and will supersede the judgment of the individual. Any authority demanding such comprehensive loyalty must provide itself with some superhuman sanction. No form of government has, in recorded history, ever rested its authority upon naked power. It has always sought and been endowed with a moral force. In the pre-Columbian age, the authority of the state derived from the Divine Right of the King. The state of the intervening period derived its limited powers from no higher source than the consent of the governed. To justify its present supremacy, the modern state seeks a larger sanction. It claims the consent of the governed not as something freely offered but as something which cannot morally be refused. The new authority of the state is too young to appeal to tradition. It cannot invoke reason, for reason is disobedient. But it can and does successfully invoke historical determinism or social necessity.

This development is, at least, a logical derivative of the immediate past. This period was, as we have said, one of increasing material welfare, and of increasing emphasis on material welfare. Indeed, good and evil, right and wrong, are currently described primarily in economic terms. In a society which has lost one theory of social relations and has not devised another, "right and wrong"

> Between whose endless jar justice resides

must either "lose their names" and become mere expressions of competitive power, or find an arbiter that purports to speak with superhuman authority—in this instance, in the name of society itself. Such an invocation becomes the *ultima ratio* which quiets but does not end all argument.

It does not end all argument, for man is a creature of pluralistic loyalties. The monistic, materialistic concept of society embodied in the contemporary state continually conflicts with alternative loyalties. Nowhere have these conflicts been resolved. Under certain conditions economic authoritarianism has ended political, intellectual, and religious freedom. In others man assumes that economic authoritarianism is compatible with political, intellectual, and religious freedom. This remains to be proved. But one thing is clear: the area of the exercise of the individual will is much narrower than in the recent past. The individual is becoming absorbed in the citizen.

We began with Lord Acton's statement that the fifteenth century marked a milestone in history, separating two phases of historical development. I have tonight given my reasons for regarding the twentieth century as another of those frontiers of history. It seems to me that the four centuries following the great discoveries constitute a recognizable period, distinguished from its predecessor by its political forms, its economic institutions, its social structure, and its moral attitudes. Society is normally undergoing continuous change of form without alteration of content; but it seems to me that in our lifetime it has undergone not mere changes in form but such changes in substance as to mark a distinguishable historical discontinuity. In stating these opinions, as I said earlier, I am not arguing a thesis—I am suggesting a point of view, in the hope that from it some of the problems of the time may be seen in a clearer perspective.

Time as well as space has its voyages of discovery, and, willingly or reluctantly, time has enlisted us for one of those voyages. We are outward bound. We can imagine with what hopes and fears the companions of Columbus watched the gathering twilight the first evening of that voyage. The familiar shores had dissolved in a darkening sea. For a while, a few lights still held their eyes and hearts to the past; these vanished, and there were only the stars above and the sea beneath, and their own hearts, brave or fearful. They hoped they would find a new way to an old world; they were to find a new way to a new world. Alone in his cabin, Columbus opened the pages of his journal—the blank pages on which his hand would write the momentous future. Of all the company, he alone, perhaps, was confident. He believed in himself, but his belief in himself was reinforced by his belief in something beyond himself, the purpose which he alone could fulfill, and which he must fulfill. Yet confidence in himself, and in his mission was not enough even for his resolute soul, for at the top of the white page, he began his entry:

Jesus cum Maria sit nobis in via.

THE PREHISTORIC ARCHAEOLOGY OF TANGIER ZONE, MOROCCO

HUGH HENCKEN

Director, American School of Prehistoric Research

(*Read April 22, 1948*)

TANGIER is an inviting area to the archaeologist because it is a point at which Europe and Africa meet, and also where the Mediterranean joins the Atlantic. Standing as it does at a crossroads of the world, it reflects many currents in the early history of man.

The American School of Prehistoric Research, with the generous support of the American Philosophical Society and the Viking Fund, sent an archaeological expedition to Tangier in 1947. This paper is a brief, preliminary report of the work of that expedition. The final report is being prepared by Mr. Bruce Howe of Harvard for publication in the *Bulletin* of the School.

Some years before the war the American Consul in Tangier, Mr. Hooker Doolittle, and Dr. Ralph Nahon of New York, who was also in Tangier at the time, began the exploration of the Caves of Hercules in the vicinity of Cape Ashakar on the Atlantic Coast of the Tangier Zone. When Professor Carleton S. Coon of the Department of Anthropology of Harvard University visited Tangier in 1939, he found that Mr. Doolittle and Dr. Nahon had already removed the Neolithic and later horizons in a large cavern called the High Cave on the end of the cape. Professor Coon then obtained a grant from the Peabody Museum of Harvard University and made a deep trench in the Pleistocene deposit below the Neolithic layer. After his departure, Mr. Doolittle and Dr. Nahon excavated a large part of the Pleistocene deposit using the stratigraphic methods learned from Professor Coon. Ultimately all the material from the High Cave reached the Peabody Museum but, when the final publication [1] has been prepared, the Museum plans to return a liberal share to an institution in Morocco.

Since Professor Coon's trench was hastily made in a limited time as the outbreak of the war approached, and since the other two excavators, though careful observers, were necessarily limited in their experience, it seemed wise to investigate the High Cave again, and at the same time to examine some of the other caves in the vicinity. The expedition was under the direction of the writer and also included Professor and Mrs. Coon and three graduate students, Miss Charlene Craft of Radcliffe and Messrs. Bruce Howe and Henry Myers of Harvard. The Geological Society of America also sent to Tangier at the same time Mr. Charles Stearns, Jr., of the Department of Geology of Tufts College. His purpose was to study the geology of northwestern Morocco. Mr. Stearns was of the greatest help in reviewing the geology of the High Cave and its vicinity, and also in many other ways. Permission to excavate was arranged in advance of our arrival by the American Legation in Morocco which is located at Tangier. Owing to the careful attention given to our affairs by the Minister, Mr. Paul Alling, and the Senior Secretary, Mr. John Goodyear, this was obtained without difficulty from the International Administration. The Administrator, Admiral Luiz de Magalhaes Correa, and the Chief Engineer of the Department of Public Works, Monsieur R. Melenotte, welcomed the proposal with enthusiasm and, when the work was finished, graciously gave permission for all the objects found to be taken to Harvard for study on the understanding that seventy-five per cent be returned to Tangier when the study should be completed. The expedition is also deeply indebted to the late Dr. Armand Ruhlmann of the Inspection des Antiquités du Maroc for a prolonged visit to our excavations during which he gave us invaluable advice and assistance of many kinds. Without this we would not have been in nearly such a strong position with regard to the interpretation of our material. We are also grateful to Professor Julio Martínez Santa-Olalla of Madrid for twice visiting the expedition and for giving us important help and information.

The earliest site investigated was on the plateau back of Cape Ashakar. Here Mr. Stearns noticed gravels deposited by streams which had flowed

[1] A preliminary report has already appeared on certain parts of the archaeological work before the war. See Howe, Bruce, and Hallam L. Movius, Jr., A stone age cave site in Tangier, *Pap. Peabody Mus.* **28** (1): 1–32, 1947.

FIG. 1. Cleaver (center) and two hand-axes from Cape Ashakar, Tangier Zone.

into the sea when it was eighteen meters above its present level. An eighteen meter sea level is believed to have belonged to the earlier part of the third interglacial of the Pleistocene. In these gravels Mr. Stearns noticed a large flint cleaver (fig. 1) and subsequent search there produced hand-axes (fig. 1) and other worked flints. These hand-axes may be classed as Late Acheulian. Hand-axes are found in India, western Asia, and in many parts of Africa including the north. They also occur in western Europe and Italy but are absent from eastern Europe until the third interglacial when they occur in the Crimea and Poland.[2] On the mere basis of distribution, Europe, being at one extremity of this vast area, would seem originally to have received the hand-axe idea from the East by way of Africa. But that would have been at a far earlier time than the late Acheulian, since according to the Abbé Breuil the oldest datable hand-axes are the Abbevillian ones from the highest terrace of the Somme Valley dated to the first interglacial of the Pleistocene. If this is so, our Acheulian tools would be late representatives of the hand-axe movement at the point where it may well have gone from Africa to Europe. It should, however, be added that at present archaeologists in North Africa are inclined to doubt so high an antiquity for their earliest material.

The next site in order of age was at the Mackay Radio Station some way south of Cape Ashakar, and again it was Mr. Stearns whose geological studies brought it to notice. Here excavation produced flint tools in a deposit probably formed during the period of a thirteen meter sea, believed to belong to the latter part of the third interglacial. These flakes, points and other implements (fig. 2) resemble those of the Levalloiso-Mousterian type but are very small, perhaps because only small nodules of flint were available.

The Levalloiso-Mousterian culture is a mixture of two traditions, the Levallois and the Mousterian. Elements of the Mousterian tradition, often associated with the extinct Neanderthal race of man, extend in a broad zone across Eurasia from western China [3] to France. The Levallois tradition extends from India to western Asia, and through much of Africa including the north, but in Europe is found mainly in the west. Mixed cultures of Levalloiso-Mousterian type occur in various places as in Palestine at Mt. Carmel [4] and also in North Africa. The relationship of these two traditions is not always clear, but it would look from the distribution as though they were techniques that traveled to western Europe over long distances, and that the Levallois, since it occurs in Europe largely in the west, may have come there by way of North Africa.[5] But again, the Levallois element at Tangier, like the Acheulian,

[2] I am indebted for this and other information about Russia and eastern Europe to my colleague, Dr. H. L. Movius of the Peabody Museum, who is at present making a study of the Palaeolithic in those areas.

[3] Boule, E., H. Breuil, E. Licent, and P. Teilhard de Chardin, Le paléolithique de la Chine, *Arch. Inst. paléont. hum.* **4**: 101–121, 1928.

[4] Garrod, D. A. E., and D. M. A. Bate, *The Stone Age of Mount Carmel, Report of the Joint Expedition of the British School of Archaeology in Jerusalem and the American School of Prehistoric Research* I, Oxford, 1937.

[5] Dr. Movius has kindly pointed out to me that in South Russia and eastern Europe some of the cultures of this time may be classed as Levalloiso-Mousterian, presumably indicating a lesser flow of the Levallois tradition into Europe.

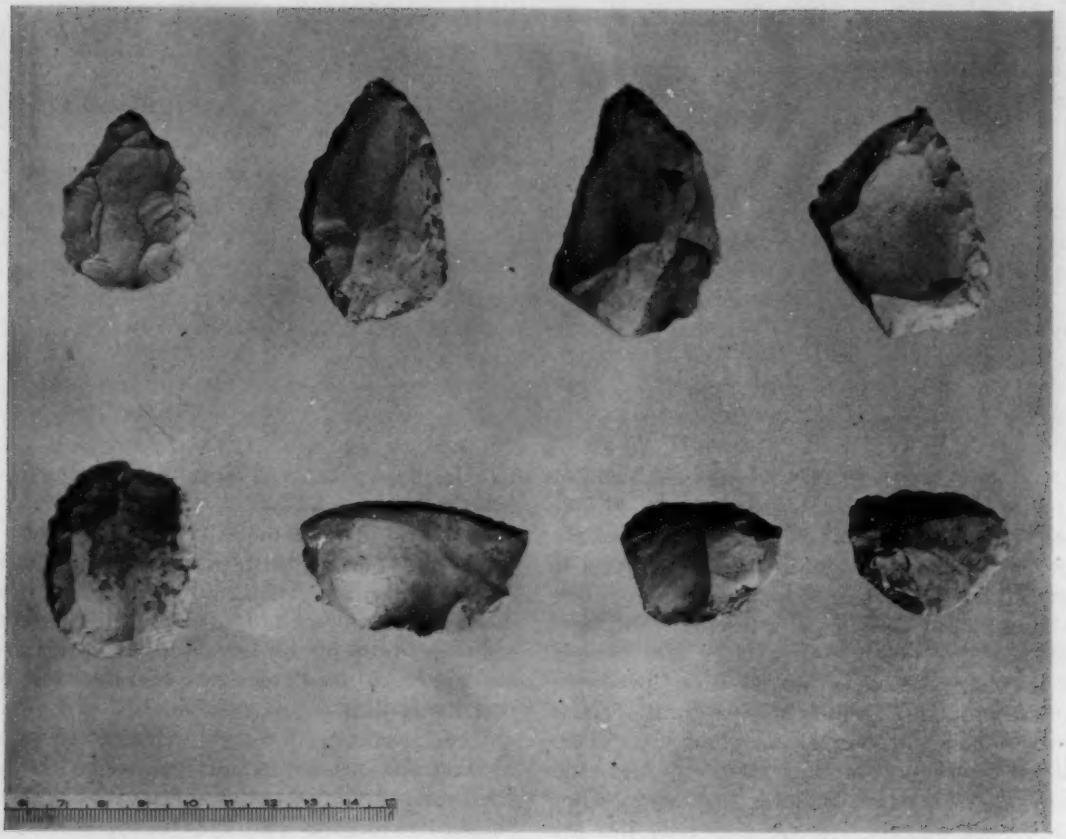

FIG. 2. Points (above) and flakes (below) from the Mackay Radio Station, Tangier Zone.

does not represent an early stage in the movement of Levalloisian technique from Africa to Europe, for the Abbé Breiul places the oldest Levallois of the Somme in the second Pleistocene interglacial.

The third site in chronological order is Mugharet el 'Aliya, the High Cave[6] itself, and here the strata called Red 1 and Brown 1 in figure 3 containing human implements appeared to belong to the latter part of the last Pleistocene glaciation. This was indicated in part by the bones of animals found in these layers: elephant, hippopotamus, rhinoceros, giraffe, etc. These had been killed for food by the inhabitants of the cave. Such animals, found today in Central Africa, could live in North Africa during the last Pleistocene glaciation, because, owing to glacial conditions at that time in Europe, North Africa was well watered, and these large herbivorous animals could find a living.

The culture found associated with the bones consisted chiefly of small flakes resembling the Levallois type (fig. 4), points related to Mousterian ones (fig. 5), and leaf-shape dart heads finely flaked on both sides (fig. 6). In Red 1 this type developed into something like barbed arrow heads (fig. 6, two examples at the upper left).

The relationship between these dart heads and points of two other well known North African industries, the S'baïkian and the Aterian,[7] both discovered by Professor Maurice Reygasse of Algiers, is a subject for future study. The same is true of their connection, if any, with the so-called Solutrean with barbed points of Parpalló[8]

[6] Howe, Bruce, and Hallam L. Movius, Jr., *loc. cit.*, contains a preliminary report on the culture.

[7] For the Aterian see also Neuville, R., and A. Ruhlmann, La place du paléolithique ancien dans le quaternaire Marocain, *Collection Hesperis*, Institute des Hautes-Etudes Marocaines **8**, 1941. Ruhlmann, A., Les grottes préhistoriques d' "El Khenzira," *Publications du Service des Antiquités du Maroc*, Fascicule 2, 1936. Caton-Thompson, Gertrude, *The Aterian industry*. Huxley Memorial Lecture for 1946. Royal Anthropological Institute of Great Britain and Ireland, 1947.

[8] Pericot Garcia, L., *La Cueva del Parpalló* (Gandía); Excavaciones del Servicio de investigación prehistórica

near Valencia and the Solutrean of France. But it is easy to imagine at first glance some underlying connection between at least some of these forms.

Another discovery, this time in Red 2 below the bulk of the palaeolithic tools, consisted of teeth and a fragment of a maxilla attributable to a North African form of Neanderthal man.[9] Thus far only one other such find has ever been reported from Africa, Rabat Man[10] also from Morocco. Neanderthal discoveries apparently extend as far east as Russian Turkestan[11] but the bulk of the remains are from Palestine[12] and western Europe including Spain and Gibraltar. Hence it is not hard to imagine that these Moroccan Neanderthals may have come from there. But the relationship of the Neanderthal physical type to the culture of the High Cave, with its apparently Mousterian element that in Europe and elsewhere accompanies Neanderthal man, is also a matter for further study.

In 1947 further excavation was carried out in Red 1, Brown 1, and Red 2. The stratigraphy

de la Excma. Diputación provincial de Valencia. Consejo Superior de Investigaciones Científicas, Instituto Diego Velásquez, Madrid, 1942.

[9] Senyürek, M. S., Fossil man in Tangier, *Pap. Peabody Mus.* 16, No. 3, 1–27, 1940.

[10] Neuville, R., and A. Ruhlmann, L'age de l'homme fossile de Rabat, *Bul. So. Anthrop. Paris* **3**, series 9, 74–88, 1942. Marçais, Jean, Découverte de restes humains fossiles dans les grès quaternaires de Rabat, *Anthropologie, Paris* **44**: 579–583, 1934. Vallois, H., L'homme fossil de Rabat, *C. R. Acad. Sci. Paris* **221**: 669–671, 1945.

[11] Okladnikov, Alexei, Neanderthal man and his culture in central Asia, *Asia* **40**: 357–361, 1940.

[12] McCown, Theodore D., and Sir Arthur Keith, *The Stone Age of Mount Carmel. Report of the Joint Expedition of the British School of Archaeology in Jerusalem and the American School of Prehistoric Research* II, Oxford, 1939.

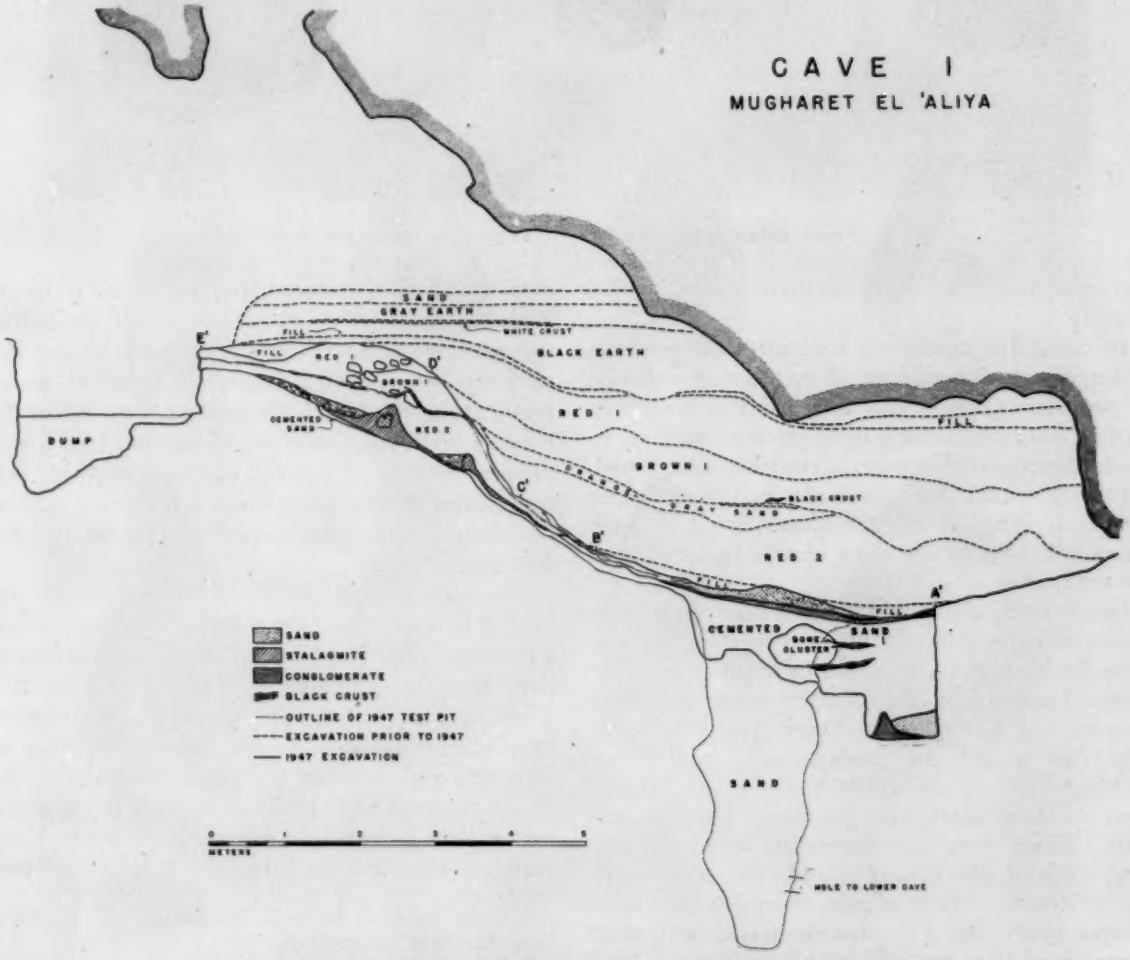

FIG. 3. Section of Mugharet el 'Aliya, the High Cave.

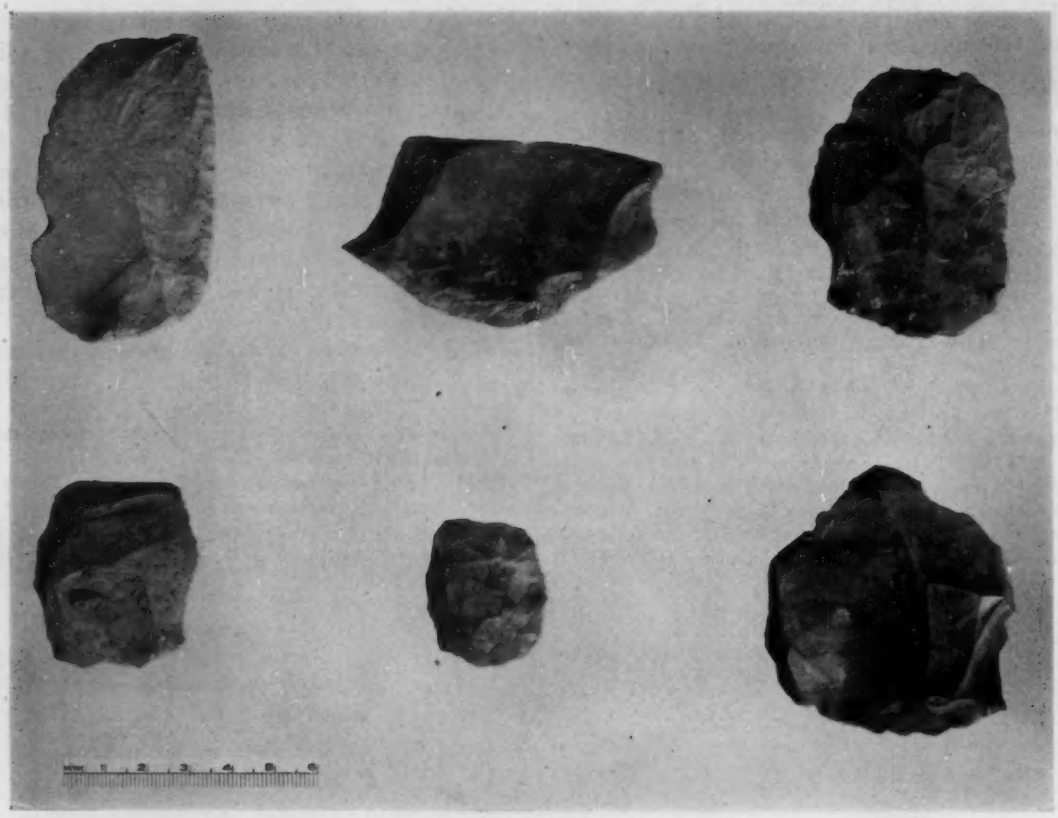

FIG. 4. Small flakes resembling the Levallois type, from the High Cave.

was confirmed and early sections were clarified (fig. 3).

In doing this, additional implements were found to amplify the knowledge of the culture obtained in previous years. The floor of the cave was further examined, and a deep pit was made in it. No further traces of human occupation were found, but many animal bones were obtained from deeper levels. It is hoped that the identification of these bones will help to fix more clearly the period of the occupation.

Immediately above Red 1 was a deep black layer whose neolithic contents differed in every respect from that below. The bones of animals were no longer fossilized and no longer represented the savanna types noted from lower layers. Instead they represented the modern wild animals of North Africa and also cattle, sheep, goat, and pig. Some of these latter must represent domestic animals. There were also numerous sherds of pottery, some of which were found even at the very top of Red 1. These in part represent pots with pointed bases (fig. 7), often decorated with shell impressions (fig. 8). Flint and bone tools were also found that differed entirely from those in Red 1. As for the pottery, it closely resembles the neolithic ware of Southern Spain,[13] and apparently belongs to a family of neolithic wares found along the North African coast as far as the borders of Egypt. One would suppose that it was in some way an offshoot of the basic neolithic culture of the Middle East, where agriculture, animal husbandry, and pottery seem first to have come into use.

The fact that this neolithic stratum rested immediately upon the Upper Palaeolithic one raises a problem. Did the Upper Palaeolithic last longer than hitherto supposed? Howe and Movius[14] point out that in Red 1 the savanna forms seem to have been disappearing. Or did the Neolithic of Tangier, and consequently the Neolithic of the Mediterranean and the Middle East, begin much earlier than is generally supposed? Or was there really a considerable interval of time unrepre-

[13] I am indebted for this information to Professor Julio Martínez Santa-Olalla.

[14] *Loc. cit.*, 26.

sented by any deposit between the end of Red 1 and the beginning of the black neolithic layer?

Since the neolithic layer of the High Cave had been removed without subdivision before Professor Coon's arrival, two other caves were excavated in the hope of learning more about this culture. These were the Summer Cave on Cape Ashakar and the Horse Cave in the Oued Ashakar, a small valley that lies immediately north of the cape.

Both told substantially the same story. The same pottery and stone and bone tools were found, and these were excavated stratigraphically. It is believed that a relative chronology for the neolithic of the Tangier area can be formulated from this material. In the Horse Cave pottery became rarer in the lower levels, but in neither cave was there any evidence of pre-neolithic occupation. Hence no further evidence was obtained on the beginning of the neolithic. But a good deal was learned about its final phase. The presence in the uppermost layer of occasional Roman sherds and coins, including a coin of the fourth century A.D., shows that the neolithic of these caves persisted almost unchanged throughout the Roman period. This culture Dr. Ruhlmann has called Berbero-Roman. There appears to have been no Bronze Age in North Africa, and the Iron Age was confined to the regions around coastal towns of Punic or other origin.

Tangier, the ancient Tingis, was the capital of the native kingdom of Mauretania in pre-Roman times. Its importance was derived from its harbor on the Straits of Gibraltar, and it must have been an "iron age" Mediterranean seaport before the Romans took it over. But the native neolithic people of the Caves of Hercules, fifteen kilometers away, were unaffected by its presence, and scarcely more by the Roman occupation. Indeed a sherd or two of shell-marked pottery seemed even later than Roman times. Perhaps the prehistoric mode of life only ceased with the Arab conquest in the seventh century.

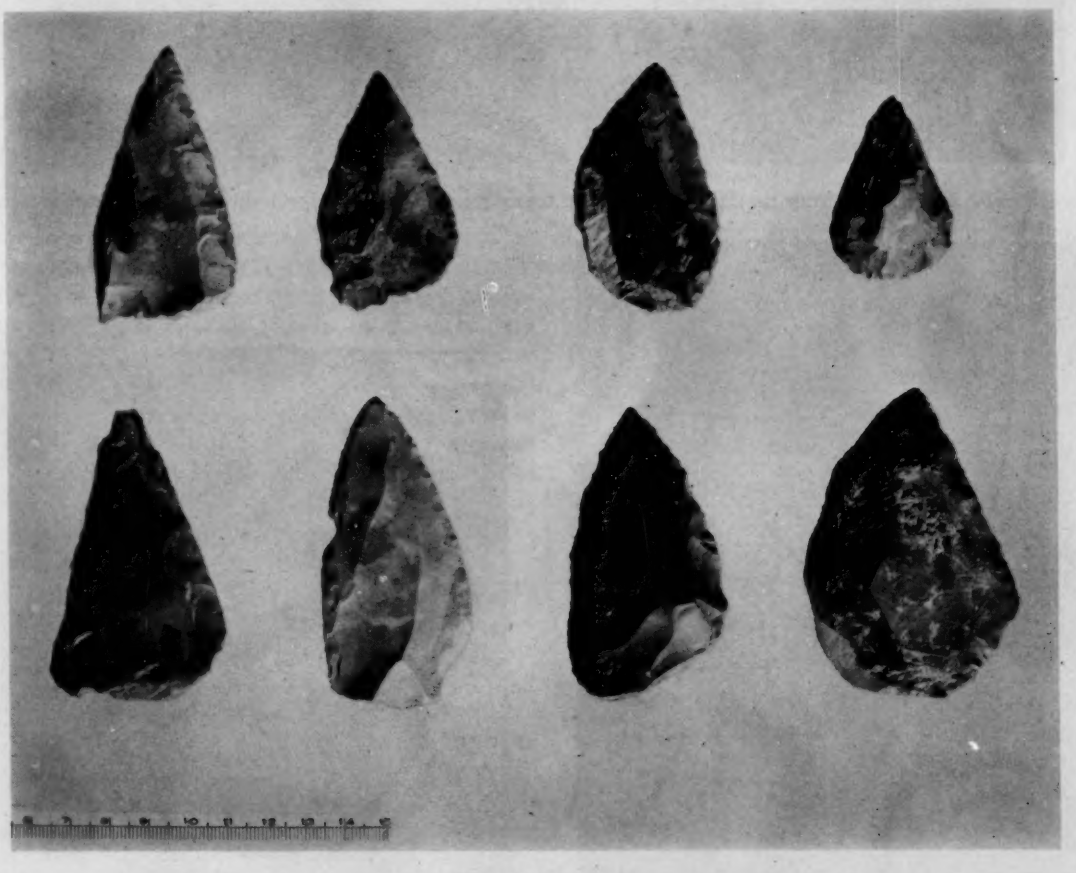

FIG. 5. Points resembling Mousterian points, from the High Cave, Red 1.

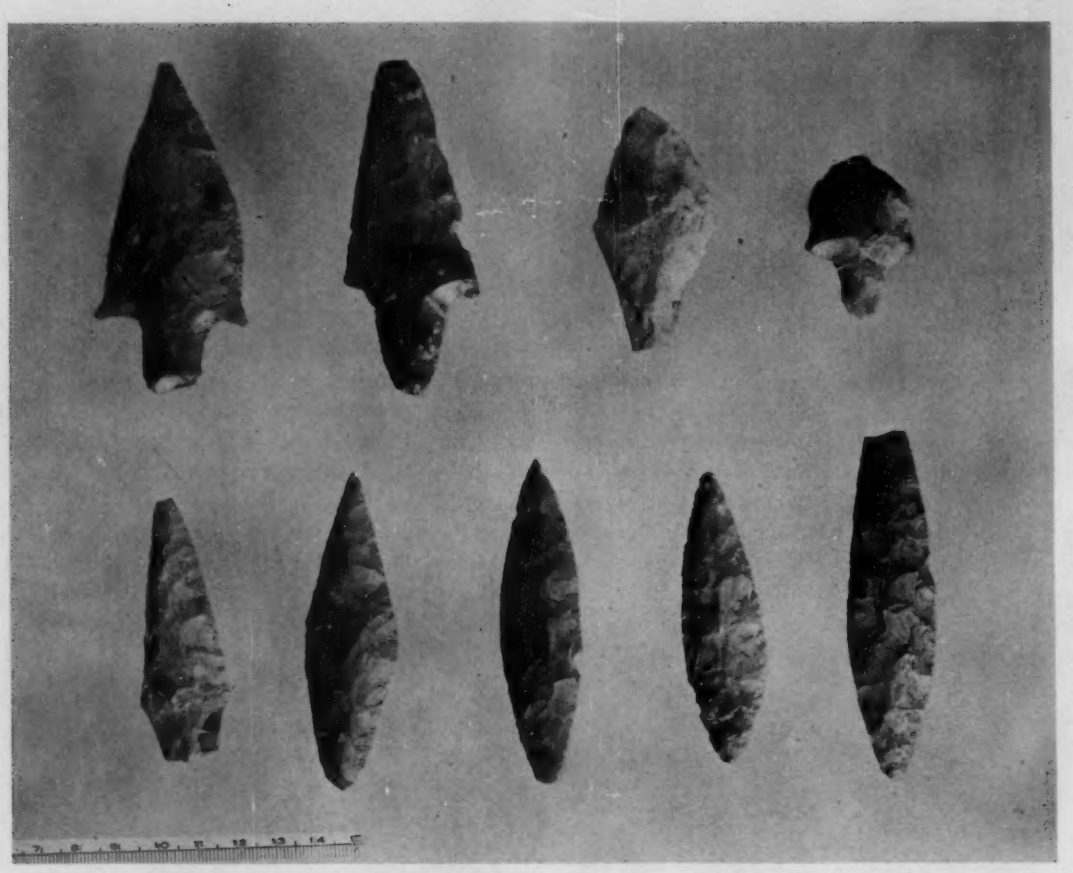

FIG. 6. Dart heads from the High Cave. The upper row is from Red 1; the lower from Brown 1.

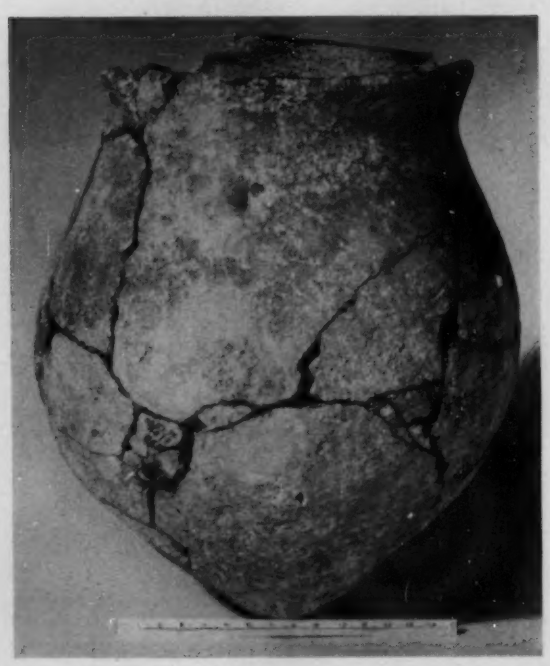

FIG. 7. Neolithic pot from the Caves of Hercules.

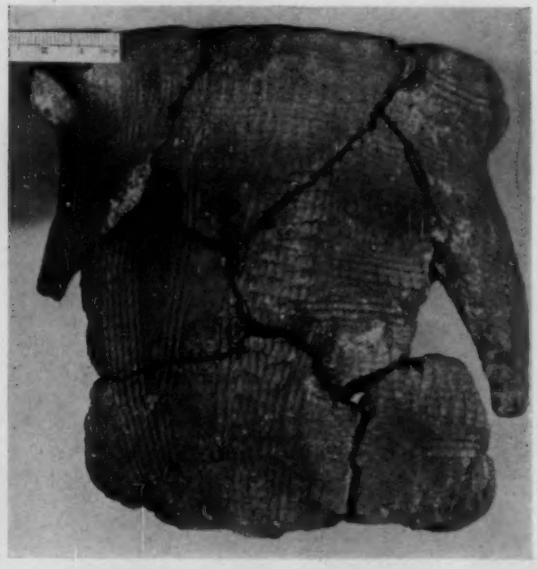

FIG. 8. Neolithic pot with shell impressions, from the Caves of Hercules.

AN UNFAMILIAR MECHANISM OF DISEASE TRANSMISSION

RICHARD E. SHOPE

Department of Animal and Plant Pathology, Rockefeller Institute for Medical Research

(*Read April 22, 1948*)

THE fact that many diseases are transmitted by insect intermediate hosts is familiar to all of you. It is well known, for instance, that mosquitoes transmit malaria, dengue, and yellow fever and that some of the rickettsial diseases are carried from host to host by lice, fleas, and ticks. However, it is not so well known that the causative agents of a small group of diseases are transmitted by helminths (worms) and it is about these that I am going to speak to you.

All three of the known worm-borne diseases affect animals but this does not necessarily mean that man has been neglected in the mechanism. It is the rule in medical research that most initial observations are made with animals and I have the feeling that the discovery of the role played by helminths as intermediate hosts for infectious agents will prove no exception to this rule. I hope, therefore, that you, as human beings, will not feel too much left out of the picture if I limit my remarks today to turkeys, dogs, and hogs.

BLACKHEAD OF TURKEYS

The first disease found to have a helminth intermediate host was blackhead of turkeys. This is a serious infectious disease of turkeys and, to a lesser extent, of chickens. The pathologic alterations, which are limited mainly to the ceca and liver, are those of caseous necrosis. The disease was first seriously investigated by Theobald Smith (13), and in 1895 he described as the cause a protozoan parasite, since called *Histomonas meleagridis*. The initial claim of this parasite to consideration as the etiologic agent was based entirely on the fact that it was uniformly present in the lesions.

In later years Graybill and Smith (4 and 14) became interested in the mode of spread of the disease. There were a number of epidemiological facts not clearly explainable on the basis of a pure histomonad infection. For instance, turkeys fed feces containing *Histomonas meleagridis* from infected or recovered birds not infrequently failed to acquire blackhead. Furthermore, though the histomonads were known to be relatively fragile parasites and to be incapable of survival for long in material discharged from the ceca, pens in which infected turkeys had been kept remained infected for young turkeys long after any histomonad should still survive. Because of such epidemiological discrepancies Graybill and Smith suspected that an accessory agent might be concerned either in the transmission of *Histomonas meleagridis* or in favoring its invasion and multiplication in the turkey.

In harmony with this hypothesis they introduced into their experiments the common cecal worm of poultry, *Heterakis gallinae*, as the possible associated factor. Young disease-free turkeys were fed feces from older turkeys known to be harboring histomonads and with these feces were mixed embryonated ova of *Heterakis gallinae*. Blackhead developed in the young turkeys and all died. It appeared from this experiment that Graybill and Smith's surmise had been correct. However, they had a surprise in store for them when they repeated their experiment on a fully controlled basis.

In the subsequent controlled experiments four groups of young turkeys were included with the following results. Group one turkeys were fed turkey feces known to contain *Histomonas meleagridis* and these birds remained normal as expected. Group two were fed turkey feces mixed with embryonated ova of *Heterakis gallinae* and all came down with blackhead, also as expected from the preliminary experiment. Group three were fed embryonated *Heterakis gallinae* ova alone and, unexpectedly, these birds came down with blackhead also. The fourth group of turkeys served as unfed controls and remained normal. From this experiment it appeared that blackhead could be produced in turkeys merely by feeding them embryonated ova of *Heterakis gallinae*. Further experiments confirmed the observation. However, though the disease had apparently been induced by *Heterakis gallinae* alone, at autopsy the lesions of the experimental birds were shown to contain *Histomonas meleagridis*. These observations led Graybill and Smith to the assumption

either that their experimental turkeys had been healthy carriers of histomonads or that their heterakis ova had been contaminated by these parasites. They favored the latter possibility. In any event, they visualized blackhead as resulting from the concerted activity of *Histomonas meleagridis* and *Heterakis gallinae*.

It remained for Tyzzer (15) and Tyzzer and Fabyan (16) to demonstrate the true state of affairs prevailing in blackhead. They experienced no difficulty in confirming the correctness of the observation that embryonated ova of *Heterakis gallinae* produced blackhead when fed to young turkeys. Furthermore, by using great care in hatching and rearing their experimental birds they procured young turkeys that were undoubtedly not carriers of *Histomonas meleagridis*. In such birds, embryonated heterakis ova still produced blackhead, and histomonads were present in the lesions. This made it seem quite clear that the ova had been contaminated by histomonads, but it did not indicate whether the contaminating protozoa were within the worm eggs or whether they merely adhered to the surfaces. The question was finally answered by some extremely ingenious experiments. Instead of incubating the heterakis ova in the usual way, in salt solution, the cultures were prepared in 1.5 per cent nitric acid. This concentration of acid was sufficient to kill any adherent histomonads promptly, and such cultures after three days even proved bacteriologically sterile. It was clear that the procedure adequately eliminated histomonads that were lying external to the shells of the worm egg. The ova were kept in the acid until they could be observed with the microscope to have become embryonated. Then they were fed to young histomonad-free turkeys. Blackhead developed, and histomonads were observed in the lesions.

Even more conclusive were the results obtained by feeding heterakis ova, some before and some after the eggs had become embryonated and hence hatchable. In these experiments the non-embryonated ova failed to cause blackhead, while the embryonated ones induced the disease. Such results indicated that infection following the feeding of heterakis ova was dependent on the hatching of the eggs of the worm in the alimentary tract of the bird.

From the observations just summarized it seems clear that *Histomonas meleagridis* is carried within the eggs of *Heterakis gallinae* and persists in the eggs during embryonation even in 1.5 per cent nitric acid. When the embryonated ova hatch in the alimentary tracts of the turkeys to which they have been fed, the young worm larvae penetrate the epithelium of the cecal glands carrying their histomonads with them and depositing them in a site favorable for their establishment in causing blackhead. The worm thus not only serves as the intermediate host for *Histomonas meleagridis* but also provides it with a portal of entry by damaging tissues and preparing them for parasitization by the protozoan.

Strangely enough, Tyzzer was never able to see histomonads microscopically in demonstrably infective heterakis eggs though they have been seen in the gut of the newly hatched larva.

SALMON POISONING OF DOGS

The second disease in which a worm was demonstrated to serve as intermediate host was salmon poisoning. This is an acute, highly fatal disease of dogs and other *Canidae* and is limited in distribution geographically to northwestern California, western Oregon, and southwestern Washington. It is an old disease and has been recognized since this area of the Pacific Northwest was first settled by white men and their dogs. According to Simms *et al* (11), practical dog-owners living along the streams and rivers of the area in which salmon poisoning prevails have long contended that the disease was a definite and distinct clinical entity which resulted when their dogs ate "sore back" salmon or trout. Theorists, considering this contention from a distance, have claimed that such an explanation could not be a correct one and in support of their views have pointed out that salmon and trout of the same genera as those implicated in the disease in Oregon form a staple part of the diet of dogs in Alaska and some parts of British Columbia where the disease in unknown.

It was not until Donham (2) reported finding an intestinal fluke in dogs dying of the disease that any definite knowledge of its real cause was available. He found the encysted metacercariae of this fluke in both salmon and trout, produced the disease by feeding these metacercariae to dogs, and recovered the mature parasites from his experimentally-fed animals. Donham believed at the time that his experiments indicated this fluke to be the actual cause of salmon poisoning. It was named *Nanophyetus salmincola* by Chapin who described it (1). Donham, Simms, and Shaw (3) showed that the snail host of the fluke was *Goniobasis plicifera* var. *silicula*. This discovery explained the geographical distribution of the disease, as the

snail in question has been collected only in those sections where salmon poisoning occurs.

But the complete elucidation of the salmon poisoning problem was not quite as simple as the discovery of Donham's fluke indicated it might be. Ever since the disease had been first under investigation in the Department of Veterinary Medicine of the Oregon Agricultural Experiment Station people working on the condition realized that it had many characteristics of an acute infection. The definite incubation period, the sudden onset, the severe systemic reaction, the rapid course, and the definite immunity in those few dogs which recovered were all suggestive of an infectious disease. The crucial experiments on this point were published in 1932 by Simms, McCapes, and Muth (12) and in these they demonstrated an infectious agent, separable from the fluke, which was capable of reproducing the clinical picture of salmon poisoning. They found that blood taken from dogs acutely ill following the ingestion of fluke-infested fish contained an agent that was transmissible serially to other dogs. Such blood, given either subcutaneously or intraperitoneally to dogs, caused a disease that was identical to that resulting from the ingestion of parasitized fish. The infectious agent was in one experiment passed serially through sixteen successive dogs by blood transfer before the series was discontinued. Experiments such as these made it apparent that the true cause of salmon poisoning was an infectious agent carried by the fluke but separable from it. The exact nature of this agent still remains unknown. It has not been seen under the microscope nor has it proven cultivable on any of the bacteriological media tried. It has some of the properties of a virus but lacks other prerequisites of this class of agents. Equally unknown is its origin within the life cycle of the transmitting fluke. In a limited number of experiments it was not found to be present in the rediae and cercariae obtained from the snail intermediate host of the fluke. It has, however, proven to be regularly present and demonstrable in the metacercarial stage of the fluke encysted in either salmon or trout. It has also been demonstrated in the adult fluke from recovered dogs. The most probable explanation is that the agent is present throughout the entire life cycle of the fluke but in its redial and cercarial stages within the snail is either masked or present in too low a concentration to be detected by dog inoculation. You will recall that in blackhead of turkeys the causative histomonad was not directly demonstrable in the heterakis egg and it may be that inapparentness of a causative agent within its worm intermediate host at some stage of the cycle is a characteristic of this type of disease transmission. It is a very prominent characteristic in the case of the next disease that I shall discuss, namely swine influenza.

SWINE INFLUENZA

This is an acute, highly contagious respiratory disease of swine caused by the bacterium *Hemophilus influenzae suis*, and the swine influenza virus acting in concert. The disease has been recognized as a clinical entity only since 1918 and there is evidence to indicate that swine acquired their infection for the first time from man during the great 1918 influenza pandemic. The swine influenza virus has the same size, resistance to physical agents, host range, and other properties as the type A human influenza virus and differs from strains of this virus only in certain minor immunological aspects and in its capacity to act synergistically with certain bacteria. Incidently I should probably note in passing that the swine influenza virus was discovered in 1931 fully two years before the human virus, as we know it today, was even suspected of existing. (Detailed information on material summarized in this paragraph may be found in references 6 and 10.)

Swine influenza is highly contagious and once an epizootic has started no intermediate host need be invoked to account for its spread. However, like most infectious diseases, it is periodic in its occurrences and during about three-quarters of each year is apparently completely absent from our swine population. A question of prime epidemiological importance concerns the source of virus for starting a new epizootic each year and its whereabouts during the nine-month interval that it is not causing disease. For this phase of the epidemiological cycle an intermediate host which could preserve and perpetuate the virus would be extremely helpful. I might say that this situation is not peculiar to swine influenza but is equally applicable to the epidemic virus diseases of human beings such as measles, mumps, chicken pox, and poliomyelitis which appear periodically in epidemic form and then apparently disappear.

Well, as it turns out, an intermediate host capable of preserving swine influenza virus from one epizootic to the next does exist and it is a worm. However, as in the case of salmon poisoning, the intermediate host arrangement for the swine influenza virus is a rather complicated one and there are yet some mysterious aspects about it. The

common swine lungworm is the actual intermediate host for the virus but since it also possesses an intermediate host of its own (5) I had better briefly outline that cycle first because it is probably unfamiliar to most of you.

The swine lungworm is a nematode parasitic in the bronchioles of the bases of the lungs of swine. The female lungworm lays fully embryonated eggs in the bronchi of the swine she infests. These are coughed up, swallowed, and reach the outer world in the feces. Their further development then is dependent upon their being ingested by an earthworm. Once within the earthworm, the lungworm eggs hatch and the larvae develop to the third or infective stage, usually localizing in the calciferous glands and hearts of the parasitized earthworm. They persist in this stage until the earthworm is eaten by a pig. In the pig the lungworms undergo two further developmental stages finally reaching the respiratory tract, by way of the blood stream and lymphatics, where they become adults. The whole of this cycle can occupy a span of several years for its completion, or, under the most favorable conditions, can be completed in a little more than a month.

Several years ago it was discovered that the lungworm could serve as intermediate host for the swine influenza virus (7). It was found that the larvae developing from lungworm ova laid during the time the host pig is undergoing an attack of swine influenza, or even from those laid for at least a short period after recovery, are carriers of swine influenza virus. A most puzzling feature of the transmission of swine influenza virus by the lungworm, however, is that virus cannot be detected by direct means either in the larvae in their earthworm intermediate hosts or in the adult lungworms after transmission to their definitive host, the pig. It appears to be present in an occult or masked form and evidence of its presence is furnished only by its subsequent behavior under very specialized conditions in the swine respiratory tract. In this respect, as I mentioned earlier, the situation is similar to that prevailing in both blackhead and salmon poisoning where throughout at least a part of the cycles the infectious agents are not directly detectable in their worm intermediate hosts. Swine infested with lungworms that are carriers of the masked virus do not as a rule come down directly with swine influenza. Instead they remain to all outward appearances perfectly normal pigs. However, though they probably do not realize it, they are in a very precarious situation so far as their eventual well-being is concerned, because all that is required to bring them down with a severe or even fatal influenzal infection is the application of some stimulus, of itself completely harmless. Several such provocative stimuli have been used, but the one that has proven most regularly effective consists in the administration of multiple intramuscular injections of the bacterium, *H. influenzae suis*. In Nature the provocative stimulus which invokes infection in such pigs seems to be related in some way to rapid and sudden changes in temperature, and exposure to raw, wet, inclement weather.

It has been demonstrated experimentally that swine influenza virus can persist without giving any detectable evidence of its presence for at least as long as thirty-two months in third stage lungworm larvae in their earthworm intermediate hosts and for at least an additional three months in association with adult lungworms in the swine respiratory tract (8). This constitutes a total elapsed time—between the case of swine influenza originally supplying the virus and the hog eventually becoming infected with it—of almost three years, and is roughly three times the amount which must be accounted for to explain the survival of virus from one epizootic to the next. Field evidence of a direct character indicates that infected lungworms are the actual mechanism responsible for perpetuating swine influenza virus in Nature (9). Revelation that a worm intermediate host can and does serve as the reservoir which preserves one virus between its periodic appearances as a disease-producing agent, even though it is only in hogs, offers interesting food for thought concerning other infectious virus diseases which, like swine influenza, apparently disappear between the periods of their epidemic visitations among us.

This completes what I have to say about helminth-transmitted diseases. As I mentioned earlier, the three just discussed are the only ones known at the moment. However, the epidemiological mechanism involved is so admirably suited to insure the prolonged survival of each of the diseases that it would be strange indeed if Nature abandoned such a mechanism after only three applications. My guess is that other cases in which helminths serve as intermediate hosts will be discovered. Progress in this type of work is not rapid and the discoveries that have thus far been made have been fortuitous to a considerable degree. Moreover, it has been a long time between individual observations: the blackhead work was published in 1922, the salmon poisoning in

1932, and the swine influenza in 1941. You may rest assured that whenever periods as long as ten years elapse between discoveries of a similar nature the problem is not a simple one nor one that is likely to be exhausted or completely understood in any one generation of search and study.

REFERENCES

1. CHAPIN, E. A. 1926. A new genus and species of trematode, the probable cause of salmon poisoning in dogs. *No. Amer. Vet.* **7**: 36–37.
2. DONHAM, C. R. 1924–1925. So-called salmon poisoning of dogs. *Jour. Amer. Vet. Med. Assn.* **66**: 637–639.
3. DONHAM, C. R., B. T. SIMMS, and J. N. SHAW. 1927. Salmon poisoning in dogs. Motion picture film. Oregon State Agr. Coll. collection.
4. GRAYBILL, H. W., and T. SMITH. 1920. Production of fatal blackhead in turkeys by feeding embryonated eggs of *Heterakis papillosa*. *Jour. Exp. Med.* **31**: 647–655.
5. HOBMAIER, A., and M. HOBMAIER. 1929. Die Entwicklung der Larve des Lungenwurmes Metastrongylus elongatus (Strongylus paradoxus) des Schweines und ihr Invasionsweg, sowie Vorläufige Mitteilung über die Entwicklung von Choerostrongylus brevivaginatus. *Münch. tierärztl. woch.* **80**: 365–369.

   HOBMAIER, A., and M. HOBMAIER. 1929. Biologie von Choerostrongylus (Metastrongylus) pudendotectus (brevivaginatus) aus der Lunge des Schweines, zugleich eine Vorläufige Mitteilung über die Entwicklung der Gruppe Synthetocaulus unserer Haustiere. *Münch. tierärztl. Woch.* **80**: 433–436.
6. SHOPE, R. E. 1936. The influenzas of swine and man. *Medicine* **15**: 453–487.
7. —— 1941. The swine lungworm as a reservoir and intermediate host for swine influenza virus. II. The transmission of swine influenza virus by the swine lungworm. *Jour. Exp. Med.* **74**: 49–68.
8. —— 1943. The swine lungworm as a reservoir and intermediate host for swine influenza virus. III. Factors influencing transmission of the virus and the provocation of influenza. *Jour. Exp. Med.* **77**: 111–126.
9. —— 1943. The swine lungworm as a reservoir and intermediate host for swine influenza virus. IV. The demonstration of masked swine influenza virus in lungworm larvae and swine under natural conditions. *Jour. Exp. Med.* **77**: 127–138.
10. —— 1944. Old, intermediate and contemporary contributions to our knowledge of pandemic influenza. *Medicine* **23**: 415–455.
11. SIMMS, B. T., C. R. DONHAM, J. N. SHAW, and A. M. MCCAPES. 1931. Salmon poisoning. *Jour. Amer. Vet. Med. Assn.* **78**: 181–195.
12. SIMMS, B. T., A. M. MCCAPES, and O. H. MUTH. 1932. Salmon poisoning: Transmission and immunization experiments. *Jour. Amer. Vet. Med. Assn.* **81**: 26–36.
13. SMITH, T. 1895. Investigations concerning infectious diseases among poultry. *U. S. Dept. of Agr., Bur. of Animal Industry, Bull.* **8**.
14. SMITH, T., and H. W. GRAYBILL. 1920. Blackhead in chickens and its experimental production by feeding embryonated eggs of *Heterakis papillosa*. *Jour. Exp. Med.* **32**: 143–152.
15. TYZZER, E. E. 1925–1926. *Heterakis vesicularis* Fröhlich 1791: A vector of an infectious disease. *Proc. Soc. Exp. Biol. and Med.* **23**: 708–709.
16. TYZZER, E. E., and M. FABYAN. 1922. A further inquiry into the source of the virus in blackhead of turkeys, together with observations on the administration of ipecac and sulfur. *Jour. Exp. Med.* **35**: 791–812.

THE MECHANISM OF WOUNDING BY HIGH VELOCITY MISSILES

E. NEWTON HARVEY

Professor of Physiology, Princeton University

(*Read April 23, 1948*)

VERY early in World War II it was noticed that tiny fragments from exploding bombs did a terrific amount of damage to persons hit. A splinter of steel, one-eighth of an inch thick, from a modern bomb burst might destroy an unbelievably large volume of tissue around its path in passing through the body. Not only would small blood vessels be torn and severed, but nerves might be paralyzed and bones broken even though the missile passed some distance away.

This effect at a distance is connected with the high velocity of fragments from modern explosives. The situation is very different from that of a low velocity missile, a spear or an arrow or even a revolver bullet. What happens with low velocity can be illustrated by thrusting a pointed rod into snow. The ice crystals are pushed ahead and move gently to one side leaving a track, perhaps somewhat larger than the rod, but with no effects at a distance. The high velocity missile, on the other hand, not only imparts momentum to material in front but also to material at the side, so that a great cavity is formed. This cavity would be a permanent one in snow, but in water or tissue it would be temporary. The effect can best be described as explosive. Later we shall see how similar the effects of high velocity bullets are to the explosion of a detonating material.

Perhaps the first question to be considered is what is meant by high velocity. No definite point can be designated for the beginning of high velocity but the explosive effects of bullets are well marked above 2,000 feet per second. A comparison of this velocity with other well known velocities is made in table 1.

TABLE 1.

VELOCITIES (FEET PER SECOND)

Nerve impulse	300
Small pistol bullet	800
Sound in air	1100
Army rifle	2700
Sound in water	4800
Bomb fragments	9000 or greater

The modern army rifle shoots a bullet that weighs 10 grams about 2,700 feet per second, thereby placing it well within the high velocity category, while bomb fragment velocities start at 9,000 feet per second and may run as high as 24,000 feet per second. The effects to be considered in this paper have resulted from a study of masses of about 50 to 1,000 milligrams moving with velocities of 2,000 to 4,800 feet per second.

Because of the remarkable effects of high velocity missiles the Committee on Medical Reseach of the Office of Scientific Research and Development asked me to find out what happens when such a high velocity missile penetrates the body. The study which followed from this request was carried out in the Biology Department of Princeton University from October 1943 until March 1946. It is the composite work of a large group of investigators, Drs. E. G. Butler, J. H. McMillen, W. O. Puckett, H. Grundfest, I. M. Korr, W. D. McElroy, A. H. Whiteley, W. Kleinberg, and G. Oster, to whom credit is due for many of the results reported in this article.

The subject under investigation has been called Wound Ballistics, indicating that it is a branch of the great field of ballistic study. For convenience the science of the movement of projectiles has been divided into (1) interior ballistics, having to do with what happens within the gun itself; (2) external ballistics, having to do with trajectories, spin, precession, etc., the behavior of the missile in the air; (3) terminal ballistics, a study of the phenomena which occur when a missile strikes its target. Wound ballistics is, therefore, a special branch of terminal ballistics, when the target happens to be a living thing.

Knowledge of what happens during wounding has two aspects. To the tactician, information on the relation of the physical properties of the projectile (mass, velocity, shape, etc.) and the ability to wound or to kill is important. Such an inquiry would give an answer to the question as to whether an antipersonnel bomb is more effective if it breaks into a large number of small fragments or a small number of large fragments. A second aspect of wound ballistics has to do with the nature of damage to tissues—whether this results

from stretching and displacement or from pressure changes accompanying the shot. A surgeon is interested in the amount of damage in a wound and the study of wound ballistics gives an answer which may aid him in the removal of dead tissue, that is the amount of debridement necessary for rapid recovery. It is this latter subject which has been of greatest interest to the Princeton group.

When a missile strikes, most of its effects are over in a few milliseconds. Therefore, in the study of wound ballistics, techniques are necessary which register what happens in a ten-thousandths or a hundred-thousandths or even one millionth of a second. Three techniques have been particularly important, one of them old and the other two relatively new.

One of the oldest methods for the study of high velocity phenomena is that of spark photography, more properly spoken of as spark shadowgraphy. In this technique no lens is used but the shadow of a bullet is registered on a photographic plate by the light from a spark whose duration may be only one millionth of a second. If the passage of the bullet causes refractive index changes in the medium in which it is moving, a shadow of these refractive index changes will also appear on the photographic plate. By this method regions of high or low pressure, such as shock waves in air or in water can be registered, as shown in figure 1.

The second technique is that of microsecond roentgenography, developed by Ehrke and Slack just before the United States entered World War II. This technique is similar to the spark technique, except that a very high intensity surge of x-rays, lasting a millionth of a second, is used instead of intense light. Shock waves cannot be detected by this method but a bullet can be recorded during its passage through tissues and the accompanying cavities in the tissue clearly seen.

The third technique is that of high speed motion

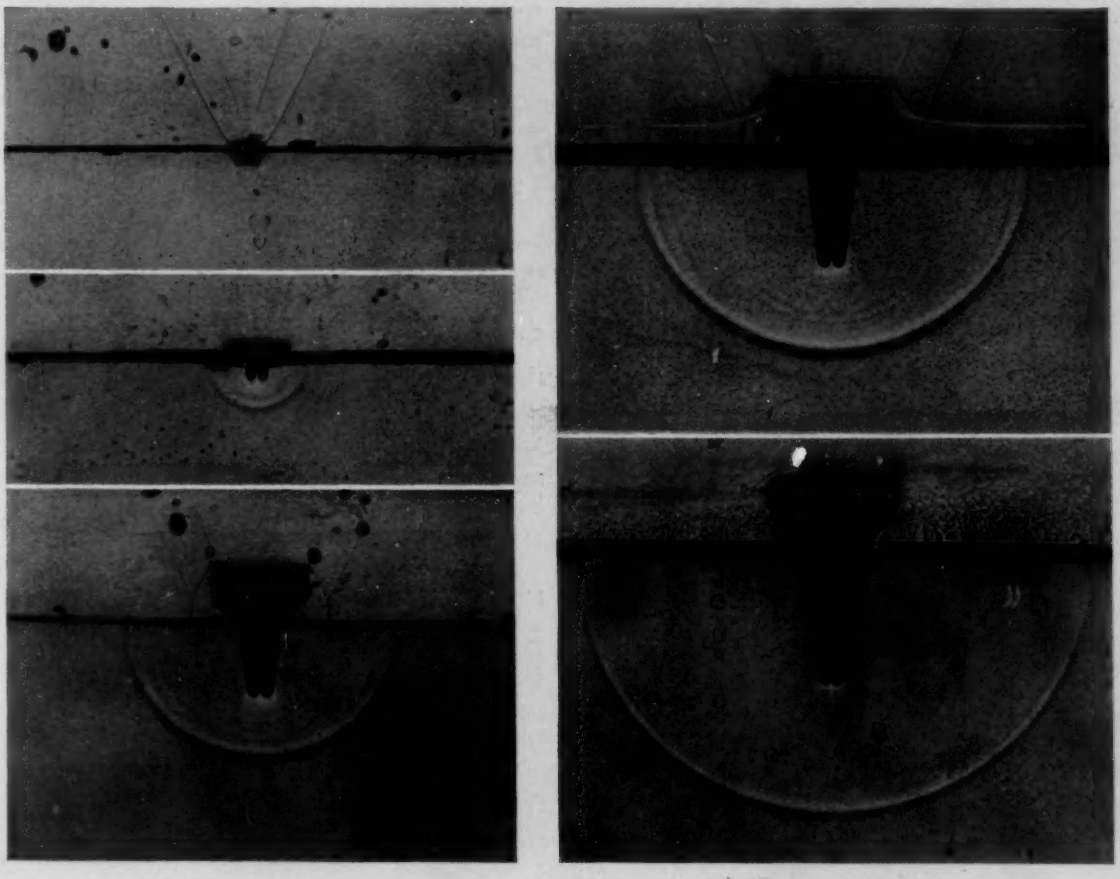

FIG. 1. Spark shadowgrams of a high velocity 1/8-inch steel sphere, taken at successively longer intervals after it has hit the surface of water. Shock waves in air and in water are plainly visible. The secondary waves in water behind the primary shock wave (black circle) are due to vibration of the sphere.

pictures, using either one or another of two recently developed cameras. Both types of cameras work on the revolving prism principle. The film moves continuously behind the lens of the camera. Between lens and film there is placed a rotating prism whose speed is so adjusted as to throw successive images on the film at the same speed as the film is moving. Therefore, the image stands still with reference to the film for a short fraction of a second and is thereby recorded. One of these cameras, the Fastax, manufactured by the Western Electric Co., takes up to 8,000 pictures a second on 8-millimeter film. The other, manufactured by the Eastman Kodak Co., takes up to 3,000 pictures a second on 16-millimeter film. Without these modern techniques a knowledge of what happens when a high velocity missile hits an object would have been well nigh impossible.

Fortunately, in order to study wounding it is not necessary to use animals themselves, because exactly the same phenomena occur when a high velocity bullet enters water or gelatine gel as when it enters flesh. In fact even the laws of retardation are the same in the three media and only the constants differ. Perhaps this similarity of water or flesh is not surprising when we consider that most soft tissues in the body are 85 per cent to 90 per cent water. Bone, as might be expected, does obey different laws and requires special investigation. A study of water can, therefore, be substituted for a study of tissue and will illustrate all of the phenomena that occur in the actual formation of a wound. This is indeed fortunate because water is transparent and high speed photography can be used for its study.

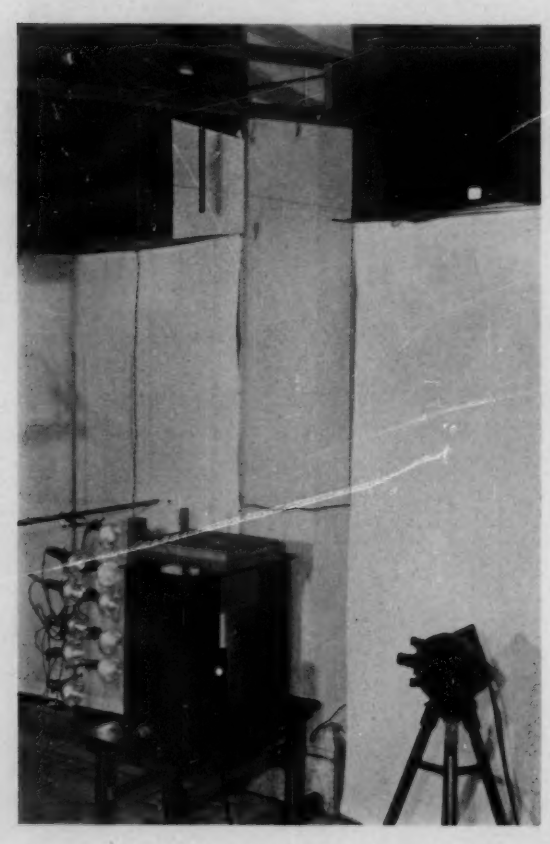

FIG. 2. A view of the gun, mounted vertically above a tank of water with plexiglas sides, with illumination at left and Fastax camera on tripod to right, for high speed motion picture photography.

To investigate underwater ballistics the gun was mounted vertically above a tank of water with plexiglas slides. Very intense illumination came from behind the tank and the high speed camera was mounted in front, as shown in figure 2. High speed motion pictures of a $\frac{1}{8}$-inch steel sphere shot into the tank with a velocity of about 3,000 feet a second allow us to study not only the retardation of the sphere but also the relatively huge cavity which it forms in the water. The sequence of events is illustrated in figure 3. Measurements of the position of the sphere in the tip of the cavity in successive frames give data for the establishment of the law of retardation, $\frac{dV}{dt} = aV^2$, known as the velocity squared law, since retardation is proportional to the square of the velocity, V. The retardation coefficient a is related to other characteristics of the missile and the medium in the following way: $a = C_D \frac{\rho A}{2M}$, where C_D is the drag coefficient, ρ is the density of the medium, A is the projected cross sectional area of the missile and M is the mass of the missile. For water it has been found that $C_D = 0.297$; for 20 per cent gelatine gel 0.350; and for muscle tissue 0.450.

The most interesting aspect of the penetration of a sphere in water is the huge temporary cavity which forms behind the sphere. This cavity is first cone shaped but later becomes more nearly spherical, contracting to a minimum and then expanding again, repeating the expansion and contraction several times before dispersing to a mass of bubbles which rise to the surface of the water. In this respect the temporary cavity formed by a bullet in water is exactly similar to the cavity formed by the explosion of a detonating material in water. In the case of an explosion, the cavity or "bubble" also oscillates several times before dispersing to bubbles of gas which are made up of the explosive

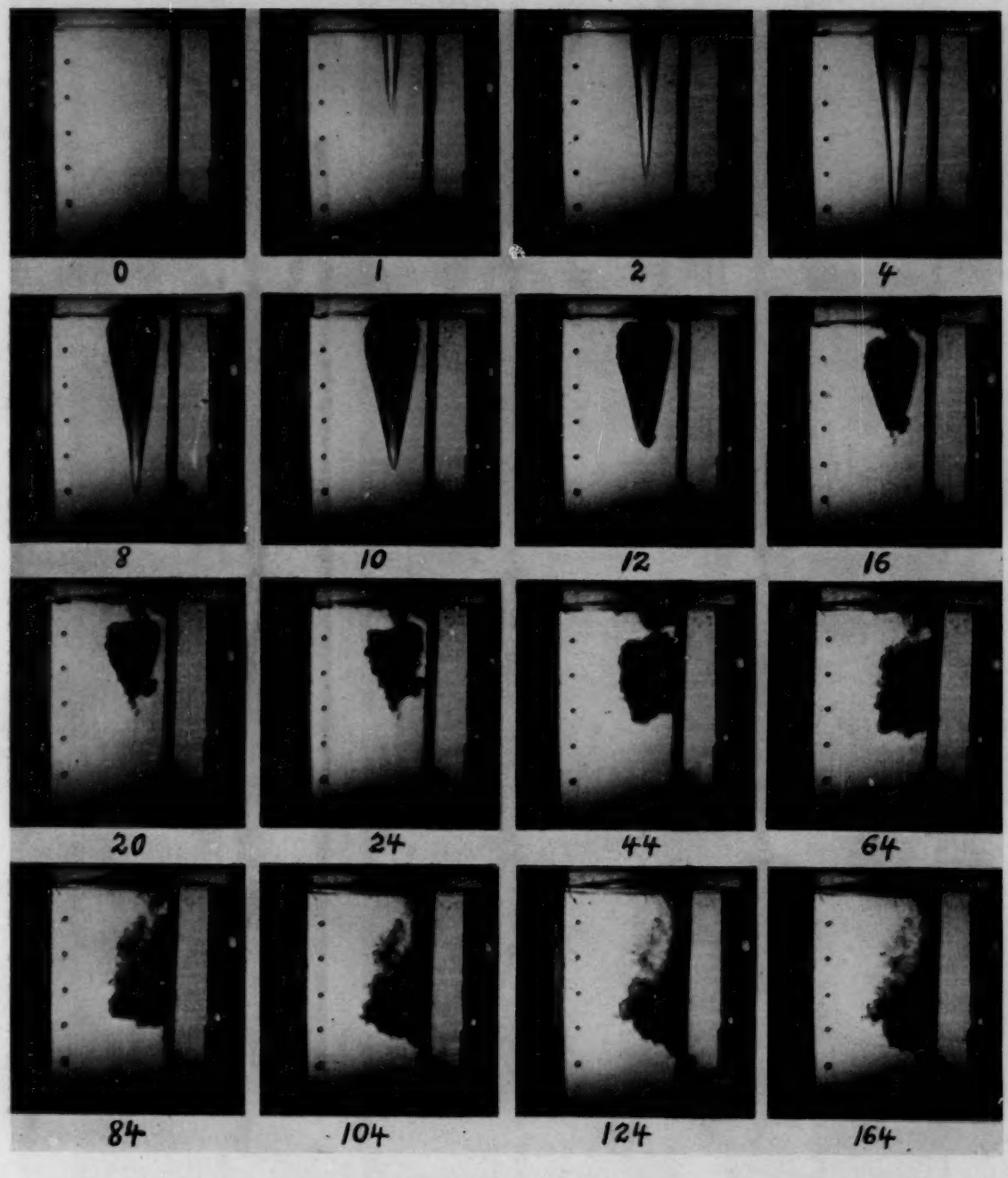

FIG. 3. Numbered frames from a high speed (about 2,000 frames per second) motion picture of a 1/8-inch sphere, shot into water with a velocity of 3,000 ft/sec. The dots to left are 5 cm apart. Note the cone-shaped cavity (behind the missile) which contracts and finally breaks into a mass of bubbles. The black vertical line is a steel plate placed in the water to study the effect of a surface on the behavior of the cavity.

FIG. 4. High speed (about 2,000 frames/sec) motion picture (with frames numbered) of a high velocity (3,000 ft/sec) 1/8-inch steel sphere shot into 20 per cent gelatine gel. Note the cavity behavior, similar to that of water. Lines at left are 5 cm apart.

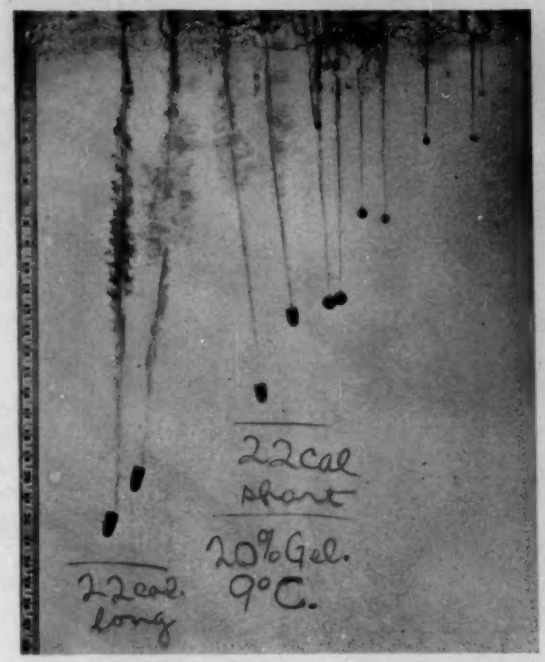

FIG. 5. A photograph of various projectiles after being shot into 20 per cent gelatine at 9° C. They illustrate penetration of various sizes and the permanent cavity left in the path of the missiles.

products of the detonating material. Moreover, the volume of the temporary cavity formed by a missile fired into water is proportional to the kinetic energy of the missile, $\frac{1}{2}MV^2$, whereas the volume of the "bubble" of an underwater detonation is also proportional to the energy of explosion of the material. We might use the volume of the temporary cavity behind a high velocity missile as a measure of the damage done, since tissue is suddenly stretched as a result of the expansion of the cavity, a procedure that damages cells and ruptures small blood vessels. Damage would, therefore, be proportional to the kinetic energy of the missile.

When a shot is fired into 20 per cent gelatine gel the same cavity formation and the same changes occur as in water. The only difference lies in the persistence of a permanent cavity in the gelatine which results from the gouging of geled material. A shot into gelatine is shown in figure 4, and the permanent cavity in gelatine in figure 5. A permanent cavity is also left in tissues, such as muscle, which are normally in the gel state.

When the missile is a fragment instead of a sphere, the temporary cavity is no longer a cone but of irregular shape, as shown in figure 6. The irregularity is due to the fact that whenever the fragment strikes broadside a large amount of energy is imparted to the water and the cavity cross-section is large. If the fragment turns so as to present a small cross-section to the water, less energy is delivered and the cavity cross-section will also be smaller. In the left hand and middle pictures of figure 6, the fragment, a short cylinder,

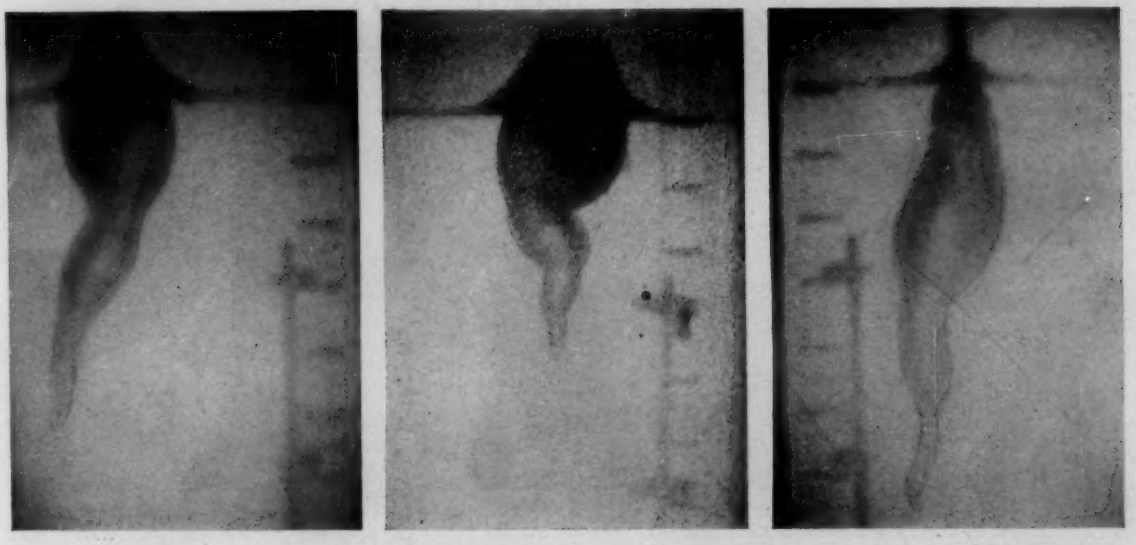

FIG. 6. The irregular temporary cavities formed in water by fragments which rotate during penetration. Left, a cylinder striking broadside. Middle, a disk striking broadside. Right, a cylinder striking head on, then turning broadside and finally recovering head-on position before slowing down. Note that the width of the cavity at any level reflects the projection area of the cylinder. Similar cavities occur in tissues when fragments penetrate. The distance between horizontal lines is 5 cm.

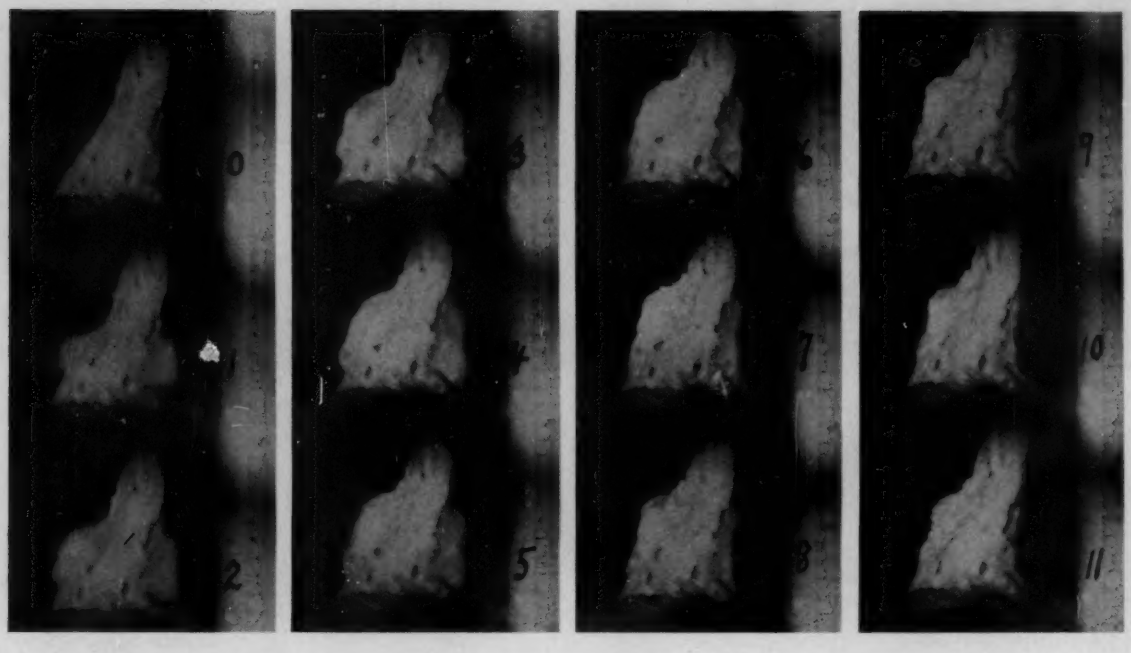

FIG. 7. A series of prints from a high speed (5,500 frames/sec) moving picture of the leg of a dead cat, with skin intact, shot from right to left through the thigh. The foot is up. The temporary swelling, indicating a large cavity within, can be clearly seen. In the succeeding frames (not reproduced) three pulsations of the cavity can be made out before the leg returns to its original size.

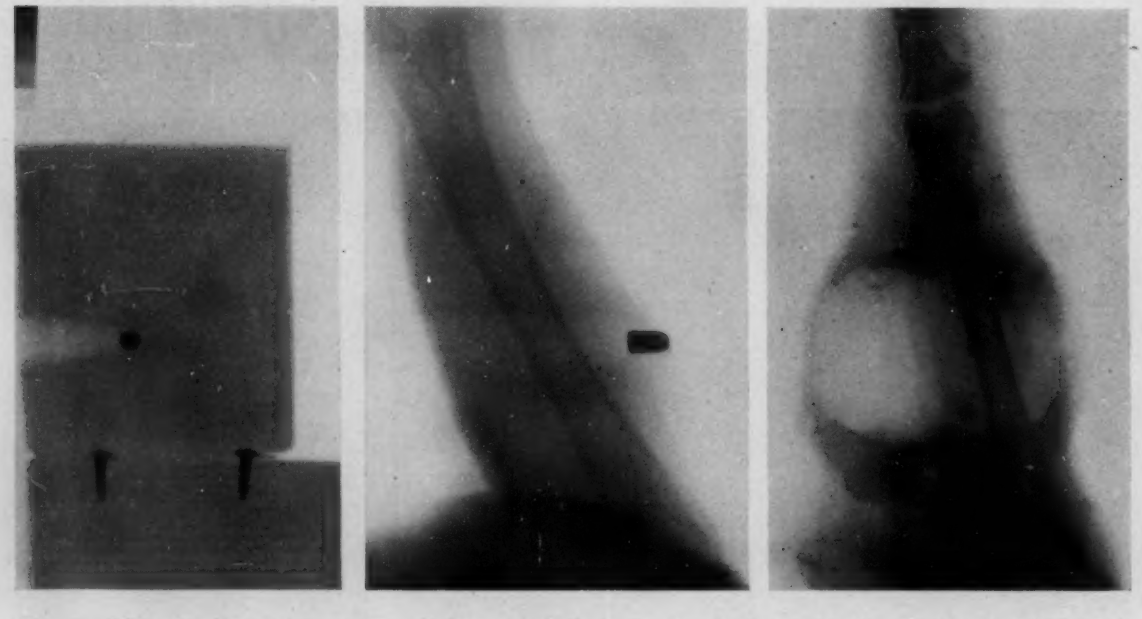

FIG. 8. Microsecond roentgenograms. Left—a 1/4-inch steel sphere during a shot into a cube of gelatine gel with a velocity of 3,000 ft/sec. Middle—a 22-calibre bullet moving through the leg of a dead dog. Right —The high temporary cavity left in the leg of a dead cat after the passage of a high velocity steel sphere.

has struck the surface of water broadside and then turned end-on. The cavity is broad at the surface but quickly narrows. In the right hand picture of figure 6, the fragment has struck end-on. The cavity is, therefore, small near the surface, but below the surface where the fragment turns broadside the cavity is much larger. Rotation of the fragment is indicated by waviness of the cavity. Wounds in the body are frequently of these bizarre shapes where a bullet has richocheted and is turning rapidly before entry.

That a large cavity is formed when a steel sphere penetrates the leg of an animal can be observed from figure 7, which shows high speed moving pictures of a ⅛-inch steel sphere which has penetrated the hind leg of a dead cat. The swelling is clearly indicated in the first 10 frames, taken at a rate of 4,500 pictures a second.

The best evidence for the existence of a temporary cavity in tissue comes from microsecond roentgenograms. Figure 8 shows these cavities in a block of gelatine, in the leg of a dead dog, a low velocity 22 calibre bullet, and in the leg of a dead cat, the enormous hole left by a high velocity steel sphere. Despite the fact that the sphere is very small, it has left behind it a very large cavity. Figure 9 shows how this cavity grows as the result of a fragment passing through and moving away from the leg. In this figure the beginning of a bone break appears although the fragment has not hit the bone. The cavity left by a steel sphere shot through a bag of gelatine, suspended from a clamp, is also shown in figure 9. The similarity in behavior of gelatine and flesh is apparent.

The proof for breaking of bone by missiles passing some distance from the bone is illustrated in figure 10. In order to make these roentgenograms, the missile, a ⅛-inch steel sphere, was fired in the same direction as the pulse of x-rays and, consequently, passed through the x-ray film. The middle picture shows the tiny black hole made in the film by the bullet. The white circular area around this hole is the temporary cavity in cross section. It will be noted that the missile has not touched the bone although the edge of the cavity is in contact with the bone and has fractured it. The large blood vessels have been injected with a radio-opaque substance and stand out clearly in the roentgenogram. They are pushed around the margin of the temporary cavity. The left picture shows the leg before and the right picture after the shot. In the right picture the bone break and the permanent cavity, marking the path of the sphere at some distance from the bone, are clearly visible. A similar set of roentgenograms has been taken with the sciatic nerve injected with radio-opaque

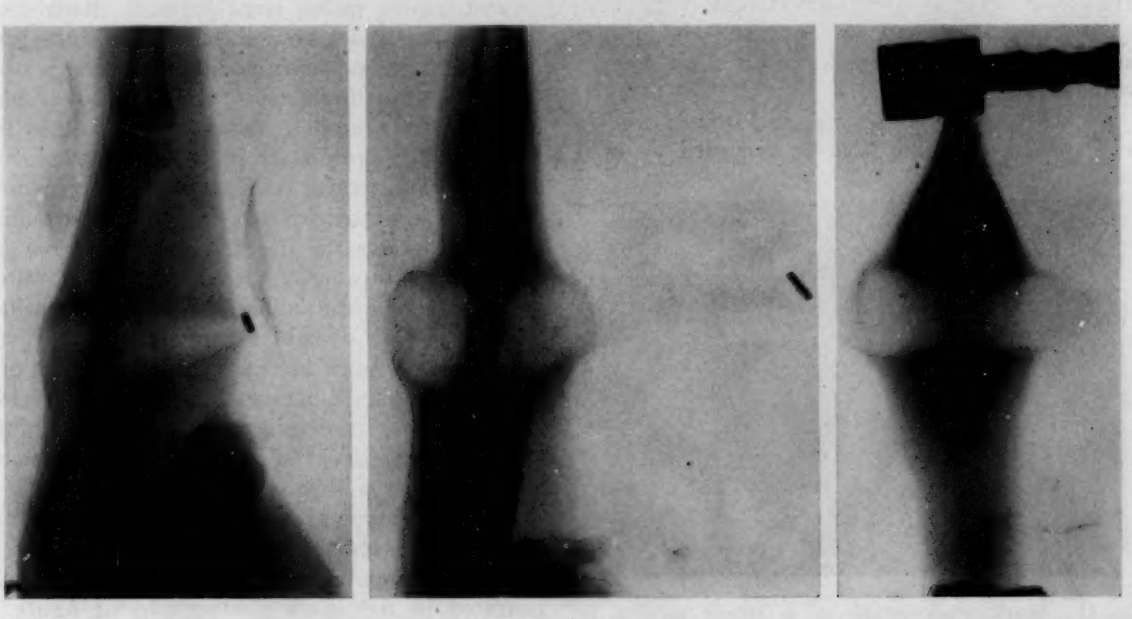

FIG. 9. Microsecond roentgenograms. Left, steel fragment moving 3,000 ft. per second just emerging from the leg of a dead cat. Middle, same, except that the fragment (seen at right) has moved farther away from the leg and the temporary cavity has grown to a very large size. Note that the bone has been fractured although not hit by the fragment. Right, the temporary cavity left by a shot through 20 per cent gelatine gel encased in a bag, to imitate conditions in a leg.

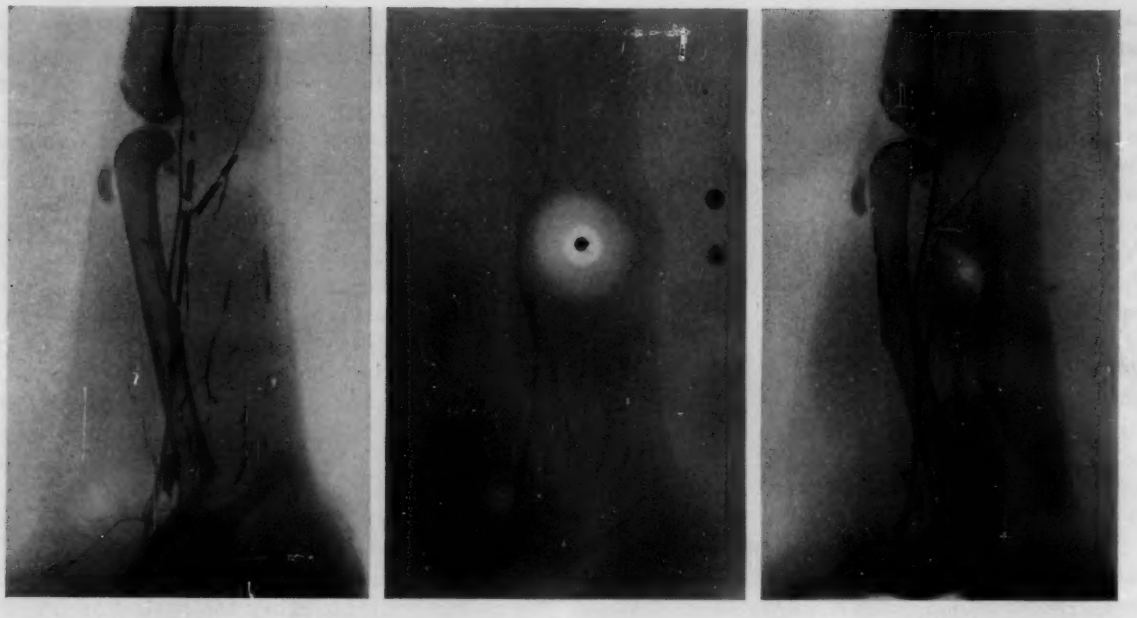

FIG. 10. Roentgenograms taken before (left), during (middle), and after (right) a high velocity steel sphere has been shot through the thigh of a dead cat in a direction parallel to the x-ray beam. Blood vessels have been injected with radio-opaque material. The black spot in center picture is the hole made in the x-ray film by the 1/8-inch steel sphere and the large circle around it is the temporary cavity seen in cross section. Note how blood vessels have been stretched around the wall of the cavity and that the bone is broken although the shot has passed at some distance from it.

material. In this case the shot may be observed to stretch the nerve around the periphery of the cavity, a condition that may explain some of the paralyses from gunshot wounds in which nerves were not directly hit.

Previous paragraphs have had to do mostly with movements which can be recorded by high speed pictures or microsecond x-rays. In addition to movements, rather large pressure changes accompany the passage of a missile through the body or through any aqueous medium. These pressure changes are of three kinds; first, extremely high pressures, measured in thousands of pounds per square inch, immediately in front of the moving missile. Destructive effects of these pressures cannot be separated from destruction by movement of the missile in the tissue. Such pressures can be visualized because of the compression of water, thereby causing refractive index changes which distort the path of light rays which pass through the region. Figure 11 is a spark photograph of a one millimeter grid between spark and high velocity steel sphere moving in water. Distortion of the grid is very apparent in front of and on each side of the moving missile.

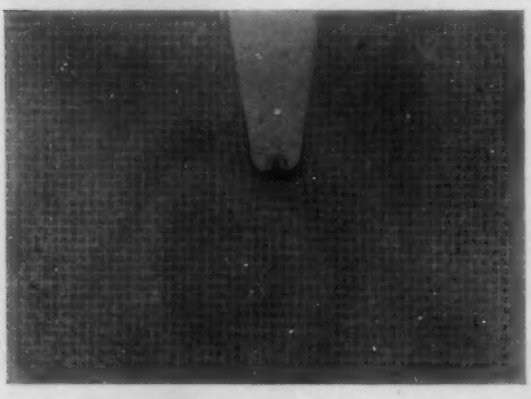

FIG. 11. Spark shadowgraph of a sphere moving in water. The distortion in the grid shows the magnitude and direction of the pressure gradient in the vicinity of the 6/32-inch steel sphere, moving with a velocity of about 1,900 ft/sec. The lines in the grid are 1 mm apart.

The second type of pressure change is connected with shock waves and is measured in hundreds of pounds per square inch. These shock waves, illustrated in the spark photographs of figure 1, can be readily studied by spark photography and measured quantitatively with piezo-electric crystal pressure gauges. They move in a circle from the point of impact on water with the velocity of sound

in water, about 4,800 feet a second. Whenever they are reflected from a free surface, the pressure waves are converted into tension waves, that is, negative pressure waves. An example is illustrated in figure 12, a spark shadowgraph of a steel sphere fired through the thin side of a vessel containing water. Suspended on the surface of the water is a piece of cat's skin. It will be observed that the initial shock wave has been reflected from the surface of the water and in so doing has changed from a black-white wave front to a white-black-white wave front, the condition connected with a tension wave, i.e., a negative pressure wave. It may also be noticed in that figure that the region to right of the tension wave is blackened by bubbles of gas which have cavitated from the water in this low pressure region. The bubbles have been again forced back into solution around the cone shaped temporary cavity, a high pressure region which is responsible for the breaking of bone.

Finally, the third type of pressure change is connected with the oscillations of the temporary cavity. When this cavity has reached its greatest expansion the pressures around it are negative but when it contracts to its minimum volume the pressures are positive. They are measured in tens of pounds per square inch. The pressure oscillations accompanying the volume oscillations of the temporary cavity in water are shown in figure 13 where the straight horizontal line represents a pressure of one atmosphere. The time curve below the record is of 1,000 cycles. All of these three types of pressure change occur when a bullet enters the body.

The question arises whether pressure changes,

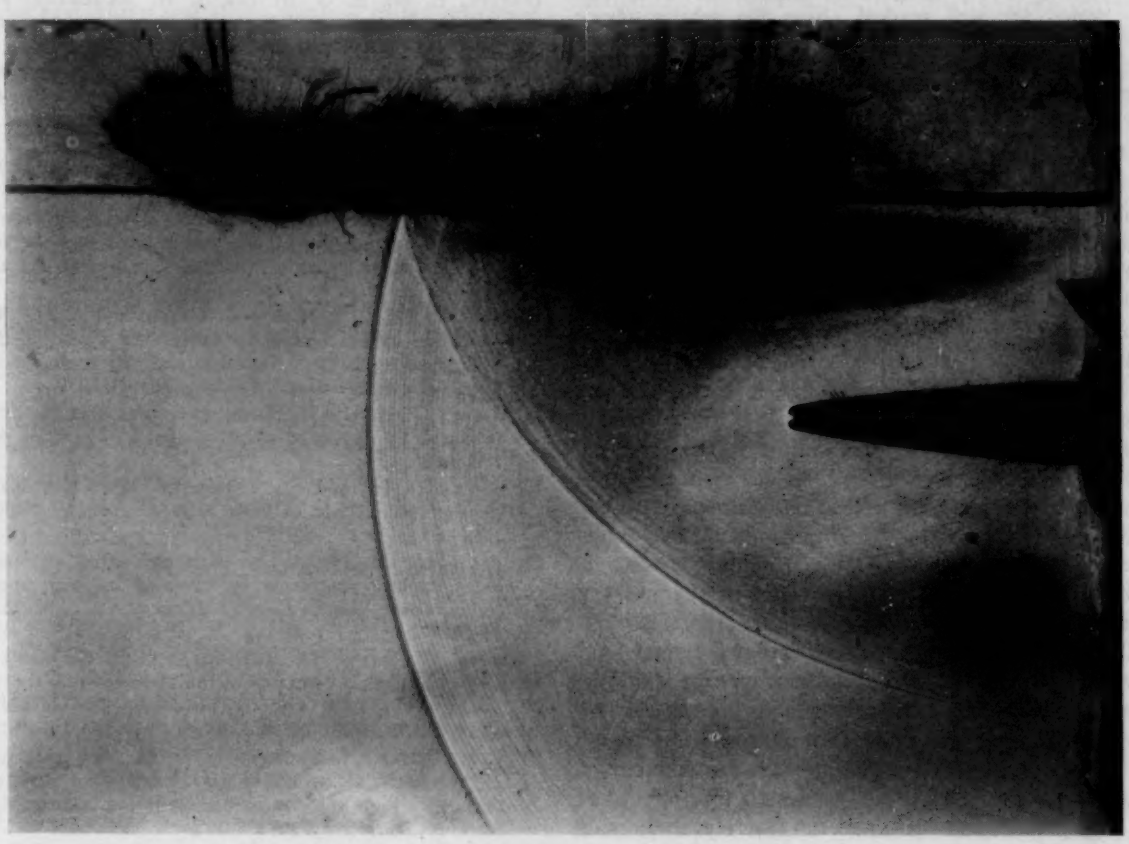

FIG. 12. A spark shadowgram of a shock wave reflected from the inner surface of cat's skin which is resting on the surface of Ringer's solution. The cone-shaped cavity behind the 3/16-inch steel sphere, which has hit the tank horizontally with a velocity of 3,000 ft/sec, is at right. The reflected wave is not as regular as the incident wave and has a light band forward, indicating that it has been inverted on reflection. The low pressure resulting from inversion is indicated by the cavitation, which appears as fine black dots. The secondary waves following the shock wave are due to vibration of the steel sphere. The missile is 6 cm below the surface of the water.

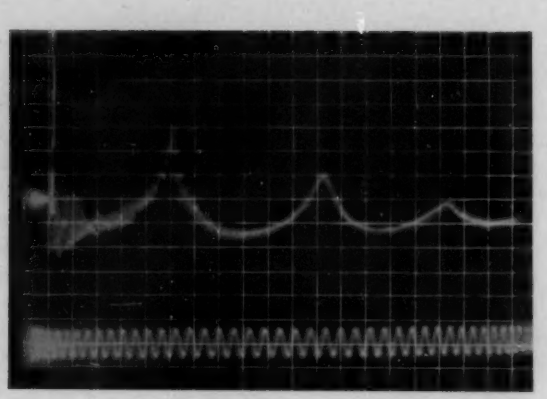

FIG. 13. A record of pressure changes in a tank of water during the passage of 3/16-inch steel sphere moving 3,000 ft/sec. The first peak at left is that of the shock wave pressure, so high as to move off the cathode-ray oscillograph screen. It has been made visible by white ink. The first, second, and third peaks, corresponding to three minimum cavity volumes, are well marked. Note the subatmospheric pressures below the base line. The high frequency (3,000/sec) pressure excursion in the first third of the record is due to vibration of the steel frame of the tank. The vertical square divisions represent 13.1 lbs/in.^{2} pressure. The time record is in 1,000 cycles.

due either to the shock wave or to the oscillating cavity, can be a factor in wounding. It is well known that increased hydrostatic pressure does not injure tissues unless it is fairly high (10,000 lbs. per square inch) and persists for a considerable time. An extensive series of investigations has led us to the belief that pressure changes are not important in wounding unless there is gas present in the tissue; for example in the lungs or in the alimentary track. When gas is present the pressure changes have a very definite effect on the gas, expanding or compressing it and thereby leading to rapid movements and stretching of tissues. Gas pockets actually behave like the temporary cavity behind a moving missile. They also oscillate as a result of pressure changes, stretch and destroy the tissue. Intestinal perforation and lung haemorrhage result. Such gas pockets are to be regarded as secondary centers of wounding.

We may, therefore, sum up the mechanism of wounding by saying that the destructive effects of a high velocity missile are not merely the result of the path which it gouges out in the tissue, but occur at a considerable distance from the path and are due to the formation of a temporary cavity with its subsequent oscillations. These rapid movements displace and stretch the tissue. They are actually responsible for the enormous destruction in adjacent regions, which is all out of proportion to the size of the high velocity fragment.

REFERENCES

A general account of recent wound ballistic work has been published by E. N. Harvey in *Recent advances in military medicine*, ed. by E. C. Andrus and others, chap. 18: 191–205, Boston, Little-Brown, 1948. A complete account of the experiments will be found in:

BUTLER, E. G., W. O. PUCKETT, E. N. HARVEY, and J. H. MCMILLEN. 1945. Experiments on head wounding by high velocity missiles. *Jour. Neurosurgery* **2**: 358–363.

HARVEY, E. N., E. G. BUTLER, J. H. MCMILLEN, and W. O. PUCKETT. 1945. Mechanism of wounding. *War Medecine* **8**: 91–104.

HARVEY, E. N., A. H. WHITELEY, H. GRUNDFEST, and J. H. MCMILLEN. 1946. Piezoelectric crystal measurements of pressure changes in the abdomen of deeply anaesthetized animals during passage of a high velocity missile. *The Military Surgeon* **98**: 509–528.

HARVEY, E. N., and J. H. MCMILLEN. 1947. An experimental study of shock waves resulting from the impact of high velocity missiles on animal tissues. *Jour. Exp. Med.* **85**: 321–328.

HARVEY, E. N., I. M. KORR, G. OSTER, and J. H. MCMILLEN. 1947. Secondary damage in wounding due to pressure changes accompanying the passage of high velocity missiles. *Surgery* **21**: 218–239.

MCMILLEN, J. H. 1945. Shock wave pressures in water produced by impact of small spheres. *Phys. Rev.* **68**: 198–209.

MCMILLEN, J. H., and E. N. HARVEY. 1946. A spark photographic study of body waves in water. *Jour. App. Physics* **17**: 541–555.

PUCKETT, W. O. 1946. The wounding effect of small high velocity fragments as revealed by high speed radiography. *Jour. Elisha Mitchell Sci. Soc.* **62**: 59–63.

PUCKETT, W. O., W. D. MCELROY, and E. N. HARVEY. 1946. Studies on wounds of the abdomen and thorax produced by high velocity missiles. *The Military Surgeon* **98**: 427–439.

PUCKETT, W. O., H. GRUNDFEST, W. D. MCELROY, and J. H. MCMILLEN. 1946. Damage to peripheral nerves by high velocity missiles without a direct hit. *Jour. Neurosurgery* **3**: 294–305.

PUBLIC SPIRIT AND AMERICAN IMPROVEMENTS

CARTER GOODRICH

Professor of Economics, Columbia University

*(Read April 23, 1948)**

MY THEME and the words of the title are taken from the first volume of the minutes of the American Philosophical Society as reorganized in 1769. On February seventeenth of that year, the Society heard and referred to its Committee on American Improvements a paper on the proposal to cut a canal between the Delaware and the Chesapeake. In April the Society approved a "Scheme of Application to the Merchants &c of this City" asking for a subscription to defray the expenses of a survey to discover the most practicable route. Declaring that such a canal "would be of the greatest benefit to the general Trade, both of Pennsylvania and Maryland," this address called attention to the advantage that Philadelphia would gain by drawing to itself "the Produce of the rich and growing settlements on the Susquehanna and its Branches." It ended with an appeal "to the Merchants and others of Philadelphia whose known public Spirit leaves no room to doubt their Readiness to assist in the Design."

The merchants showed the expected spirit, subscribing nearly two hundred pounds. Committees of the Society, joined by representatives of the contributing merchants, were commissioned to examine possible routes. During the winter they were urged "to proceed in that business with all convenient speed" and "to embrace the , . . opportunity of the frosty season" when the swamps were frozen over. Finally, they received the Society's thanks "for their Zeal in this Service at so inclement a Season of the Year."[1] The results of their inquiries are duly recorded with accompanying map in the first volume of the *Transactions*. The account begins with the following statement of policy:

> The American Philosophical Society, held at Philadelphia, have always considered it is one great end of their Institution, to set on foot, and forward the execution of, such public-spirited undertakings, as have a tendency to advance the landed and commercial interest of the British Colonies in general, and particularly of those Middle Colonies, with which they are more intimately connected.[2]

I shall not attempt to give a complete account of the Society's interest in improvements, nor to continue the story of the Chesapeake and Delaware Canal. My purpose is to call attention to the attitude shown by these early members of the Society, their zeal for American improvements as a public or patriotic cause, and to suggest that the persistence of similar attitude forms a theme essential to the understanding of the continuing movement for internal improvements which played so large a part in the economic development and the political history of the United States.

Of this movement for improved roads, canals, and later railroads, the conspicuous features down to the Civil War were the extent of government activity and the extraordinary intermingling of public and private enterprise. The major canals were built either by state action, as in the great case of the Erie Canal, or with large public aid from state, local, and federal authorities. The early railroads received similar support in very substantial amounts. Professor Milton Heath's calculations have shown that up to 1861 much more than half of the capital invested in the railroads of the South had come from public sources.[3] Though by this time the northern roads had attracted much more private capital and were displaying more of the characteristics of large-scale business enterprise, public aid in many cases remained important, and indeed the greatest period of federal largesse in land grants was still to come.

Government aid to the improvement enterprises was not confined to grants of privileges and sub-

* Prepared under the auspices of the Columbia Council for Research in the Social Sciences.

[1] *Minutes of the American Philosophical Society* 1: 17, 20–22, 24–25, 30, 32–33, 78, 80–82, 93, 1769–70. MS, Library of American Philosophical Society.

[2] *Trans. Amer. Philos. Soc.* 1: 293–300, fig. 1 of plate VII, 1769–1771.

[3] Heath, Milton S., *Public co-operation in railroad construction in the Southern United States to 1861*, 252, unpublished MS, Harvard Univ. Archives, 1937. He estimates the public investment at approximately 55 per cent of the total cost, but as at least 75 per cent of the total investment in cash, since much of the private subscription was in labor, land and materials.

sidies. Much of the work was carried forward by what seems to modern eyes a strange intermingling of public and private investment in the stock of improvement corporations. Professor Louis Hartz has recently called this the method of mixed enterprise.[4] On the subscription lists of these companies the names of federal government, states, counties and parishes, and towns and cities appeared alongside those of private individuals who invested their money or land or supplies or even their labor. Public and private funds and initiative were put together in all imaginable proportions. Neither this variety of combinations nor the extent of government activity can, I believe, be understood without the realization that the improvement enterprises, whatever their form of organization, were characteristically thought of as public-spirited undertakings in precisely the sense in which the phrase was used in the *Transactions* of the Society.

Governmental encouragement was based explicitly on this ground. For example, the charter of the James River Company, granted by the state of Virginia in 1785, declared that the proposed improvement would be "of great public utility." Since "many persons are willing to subscribe large sums of money to effect so laudable and beneficial a work," it is right that they should be allowed "to receive reasonable tolls."[5] The committee which recommended to the Virginia Legislature in 1815 a planned system of mixed enterprise declared that its purpose was "to elicit individual wealth for public improvement."[6]

The leaders of improvement companies on their part long remained convinced that the laudability of their undertakings justified them in claiming the public patronage. The directors of the Western Railroad Company of Massachusetts, noting in their 1836 report that "private liberality had been exhausted," declared that their enterprise "was so much of a public character and of such general importance as to warrant a strong appeal in its favor to the Legislature as guardian of the Common interest." Three times within the next few years, the stockholders voted, in sequence, to ask the Legislature for a loan, to appoint a large lobbying committee of respectable citizens, and to approve the text of an "Address to the People."[7] On one of these occasions, a legislator justified the procedure in terms of the interests of the Commonwealth: "Here are twenty-four hundred of her citizens embarked in a work for her benefit, and have they not a right to urge their prayer upon the considerations of this House?"[8]

The purposes of individual investors were by no means always confined to the expectation of direct return on their investment. Committees of canvassers for the Western Railroad were instructed to call "upon every man in their several precincts, *in person*, and urge upon each one, as a matter of duty, as well as of interest, to do their share to advance this great work."[9] Mathew Carey, founder of the Pennsylvania Society for the Promotion of Internal Improvements, held stock in many companies but declared that he had "never subscribed for a single share with a view to profit."[10] A commoner view, no doubt, was that of the Charleston *Times* which, in reporting the opening of the Santee-Cooper Canal, found it "equally agreeable" to contemplate the contribution "to the welfare of the state" and the prospect of ample return for "the gentlemen who had persevered so successfully, and at such great expense."[11] Yet the protestations of public interest on the part of shareholders cannot be dismissed as mere rhetoric. Otherwise the President of the North Carolina Railroad Company could hardly have found it possible, in an annual report, to reprove his private stockholders for clamoring for dividends as if—these were his precise words—"as if they had invested as capitalists."[12]

[4] Hartz, Louis, *Economic policy and democratic thought: Pennsylvania, 1776–1860*, ch. III, Cambridge, Harvard Univ. Press, 1948.

[5] Dunaway, Wayland F., *History of the James River and Kanawha Company*, 24, N. Y., Columbia Univ., 1922.

[6] Report of Committee of Roads and Internal Navigation, to the General Assembly, December, 1815, in *A collection of all laws and resolutions of the General Assembly of Virginia relating to the Board of Public Works . . .*, 51, Richmond, Shepherd and Pollard, 1819.

[7] Western Railroad, *Records* I: 41–43, 56–59, 82–89, MS, Baker Library, Harvard Univ. The Company incurred an expense at about this time of $23.83 "for printing circulars to clergymen." Bliss, George, *Historical memoir of the Western Railroad*, 59, Springfield, Samuel Bowles and Company, 1863.

[8] *Speech of Emory Washburn of Worcester delivered in the House of Representatives of Massachusetts, Feb. 14, 1838, on the bill to aid the construction of the Western Railroad*, 6, Springfield, Merriam, Wood and Co., 1838.

[9] Bliss, *op. cit.*, 29.

[10] Carey, M., *Statement of his exertions in behalf of the Chesapeake and Delaware Canal*, 8, Phila., 1825.

[11] May 28, 1801. Quoted by A. S. Salley, Jr., in an appendix to Porcher, F. A., *The history of the Santee Canal*, 13, Charleston, S. C. Hist. Soc., 1903.

[12] *Report of the President of the North Carolina Railroad to the Governor of the State*, January 1, 1857, 9, Salisbury, N. C., 1859.

Internal improvements were thus more than mere investment. A South Carolinian offered his services to the Board of Public Works in the improvement of the Catawba River. "I am," he wrote, "far advanced in life and should be preparing to leave this world, am still bless'd with health and vigor of spirits and . . . would gladly assist in forwarding an improvement of so much importance and public utility." For this, he added, "I have a talent . . . and it is lying useless." [13] The words "zeal" and "enthusiasm" appear again and again in the literature of internal improvements "Vindications" were published to claim for one individual or another the credit for specific contributions—of Elkanah Watson for "the merit of projecting the Lake Canal Policy" of New York [14] or of Carey himself for resuscitating the Chesapeake and Delaware. [15] A railroad company praised a retiring director not only as an effective worker for its interests but also as "a friend of the great cause of internal improvements." [16] The country's first railroad magazine was—in the words of its masthead—"Conducted by an Association of Gentlemen," in the town of Rogersville in East Tennessee.[17]

All these are indications that the movement represented what Professor Heath has called a great "associative effort." [18] It made free use, with little hesitation over ideology, of the agencies of government. It employed and developed the device of the corporation. But an undertaking typically began with a public meeting of interested citizens, which was likely to appoint a Committee of Correspondence, sometimes, indeed, using the old revolutionary term. Frequently the next step was the internal improvement convention, bringing together representatives from towns and counties interested in the proposal canal or railroad. These gatherings, without governmental status but with no exact parallel in the meetings either of business corporations or modern interest groups, epitomized the mingling of public and private interest in the movement for American improvements. In urging the movement forward, the Reverend Jared Sparks, editor of the *North American Review,* addressed himself "equally to individuals, corporate bodies, and state legislatures." To them all he appealed in the name of "public spirit, enlightened zeal, and honourable ambition." [19]

Sparks' rhetoric, to be sure, should not obscure the fact that the public spirit to which he appealed was compounded in good part of the economic interests of the communities in question. Often "the controlling motive," as Ulrich Phillips found for the eastern cotton belt, was "that of providing local facilities and promoting a general increase of prosperity in the neighborhoods in which the subscribers lived." This he illustrated with an editorial from the *Southern Banner* of Athens, Georgia:

> It is truly delightful to witness the enthusiastic feelings which pervade our whole community on the subject of the contemplated railroad to Augusta. The capitalist warmly advocates the scheme because it promises a profitable investment for his surplus funds, the planter because it will add to his agricultural resources, and save him the necessity of spending so large a portion of his hard earnings in getting his produce to market, the merchant and mechanic because it will enlarge their sphere of action and extend their business, and the holder of real estate because it will necessarily enhance the value of his possessions.[20]

The story could be repeated for many a small town or rural neighborhood, North and South.

In stimulating many of the greater undertakings, a dominant motive was the rivalry of the seaports for that "interesting prize," the commerce of the West.[21] As an early instance, George Washington hoped that his Potomac Company would bring the fur trade of the Great Lakes to Alexandria. New York's successful exploitation of the water level route to the interior and the

---

[13] Letter of John Barnett to V. A. Edwards, December 11, 1819, quoted in letter from V. A. Edwards to Gen. William R. Davis, January 6, 1820. MS, State Historical Commission, Columbia, S. C.

[14] Troup, Robert, *Vindication of the claim of Elkanah Watson, Esq., to the merit of projecting the lake canal policy . . .*, Geneva, N. Y., James Bogert, 1821.

[15] Carey, *op. cit.*

[16] Western Railroad, *loc. cit.*, Feb. 12, 1844.

[17] *Rail-Road Advocate,* published in 26 fortnightly issues beginning July 4, 1831.

[18] Heath, *op. cit.*, 59–60. "The great public aid programs of the first half of the Nineteenth Century might be interpreted as a culmination of the associative efforts which had developed colonization, and had received continuing impetus from the successful struggle against the King of England. Possibly the era of public aid here under consideration witnessed the last great associative effort on American soil."

[19] Sparks, Jared, Internal improvements of North Carolina, *North Amer. Rev.*, 12: 16–17, 1821.

[20] Phillips, Ulrich B., *A history of transportation in the eastern cotton belt to 1860,* 387, 222, N. Y., Columbia Univ. Press, 1908. The date of the editorial is July 6, 1833.

[21] *A collection of all laws . . ., op. cit.*, 33.

attempts of its rivals to make up the advantage tell much of the story. The Baltimore and Ohio and Pennsylvania railroads, both beginning as mixed enterprises, originated largely as part of the competitive effort of Baltimore and Philadelphia. A railroad to the Ohio was to "make Charleston the New York of the South." [22] Other major undertakings owed their beginnings mainly to the initiative of Boston, Richmond, Savannah, Mobile, and other coastal cities. Most of these cases involved stock subscriptions by the city councils and activity by city representatives in the state legislature, as well as appeals to individuals to subscribe on grounds of civic pride and their city's prosperity.

In still other cases, the appeal was primarily to the interests of a state or of a particular region within it. A railroad was to be "a Tree of Life to North Carolina," freeing it from dependence on the ports of neighboring states.[23] A toast was drunk to "Western Virginia! The feeling is awake; the canal boat shall bear away the product of our industry, where a little while ago, the mountain deer trod with trim step." [24]

Throughout the movement, however, broader and more fully national considerations were continually in mind. Military needs were often stressed as a reason for federal action, particularly by Calhoun and others after the War of 1812 had demonstrated the weakness of the nation's communications. George Washington himself, for all his concern with state and local and private interests, made his most earnest pleas on the ground of national unity. Internal improvements alone, he argued, could provide the *cement*—a word he repeated in letter after letter—that would hold the inhabitants of the West within the union.[25] Gallatin based his famous *Report on Roads and Canals* on similar grounds, and the speeches of Henry Clay and others continued to emphasize the *American* character of internal improvements.[26] As sectional lines changed and began to harden, southern leaders urged railroads for the "cementation" of the South and the West; [27] and those most anxious to preserve national unity believed that communications between the North and South particularly deserved the support of "the best friends of the moral as well as the economical interests of the Americans." [28]

The literature of the movement, moreover, breaks out again and again into appeals that are not easily reduced to terms of specific interest, and are perhaps comparable to that Elizabethan *élan* or *virtú* which Professor Howard Mumford Jones found it necessary to invoke in order to explain "The Colonial Impulse." [29] Thus in 1823 on the eve of his own great triumph in the opening of the Erie Canal, Governor DeWitt Clinton of New York urged the sister state of New Jersey to erect a similar "monument of renown," the Morris and Essex Canal, which would be cherished in grateful hearts "when the triumphs of ambition, the pageantry of power, and even the splendor of scientific glory are lost in the abyss of time." [30] Similarly Governor George McDuffie of South Carolina declared that Charleston's western railroad would be "an achievement surpassing in sublimity all that Xerxes and Hannibal and Bonaparte ever accomplished." [31] A congressional committee sought to stimulate the adoption of the Chesapeake and Ohio project by putting the question: "Shall this proud Republic lag behind the monarchs of Europe?" [32] From Washington to John Quincy Adams, moreover, many an advocate of internal improvements was sure that he saw in them the intended and proper way of making use of the blessings which Providence had bestowed upon America.

[22] South Carolina, *Legislative Proceedings*, 5, 1836. Message of Governor George McDuffie, November 1, 1836.

[23] *Communication of the President of the North Carolina Railroad Co. to the General Assembly*, 10, Raleigh, W. W. Holden, 1854.

[24] Ambler, Charles H., *Sectionalism in Virginia from 1776 to 1861*, 220, Chicago, Univ. of Chicago Press, 1910.

[25] Pickell, John, *A new chapter in the early life of Washington in connection with the narrative history of the Potomac Company*, 34, 131–132, 156, N. Y., Appleton, 1856. Ford, Worthington C., (ed.) *The writings of George Washington*, 402–414, footnote 416–418, 325, N. Y. and London, Putnam's Sons, 1889–1893.

[26] Goodrich, Carter, National planning of internal improvements, *Polit. Sci. Quart.*, **63**: 16–44, 1948.

[27] South Carolina, *Journal of the General Assembly*, 14, 1838. Message of Governor Pierce M. Butler, November 27, 1838.

[28] Martineau, Harriet, *Society in America* II: 12, N. Y., 1837.

[29] Jones, Howard Mumford, *Proc. Amer. Philos. Soc.* **90**: 131–161, 1946.

[30] Commissioners appointed by the Legislature of the State of New Jersey for the purpose of exploring the route of a canal to unite the River Delaware, near Easton, with the Passaic, near Newark, *Report*, Accompanying documents, 8, Morristown, N. J., Jacob Mann, 1828.

[31] South Carolina, *Legislative Proceedings, loc. cit.*

[32] U. S. Congress, *Report of Committee on Roads and Canals*, Nineteenth Congress, First Session, Report No. 228, 11.

This wide range of public considerations—national, sectional, and local in their character and homely or highflown in their expression—long remained intermingled with the investor's desire for a direct return in the development of the American system of transportation. It remains to suggest the outlines of the process by which the bonds that had been thought to unite "public duty" with "private energy and interest" came to be severed. Pressure for their separation came from two sides, from those who might be called the purists of government, who were opposed to aiding private profit-seekers from the public purse, and from those who might be called the purists of business, who were opposed to government competition in fields which private enterprise could occupy with profit. Of these the former were first in the field, and Andrew Jackson was their most notable early spokesman. His messages to Congress denounced the mingling of public and private funds as a yielding to corrupt corporation influence and described mixed enterprises like the Maysville Road as "artful expedients to shift upon the government the losses of unsuccessful private speculation." [33] Yet in spite of the national triumph of his program, mixed enterprise continued as the favored method in most of the states which voted for Jackson, with Tennessee as one of the leaders in the movement. There was opposition to particular measures and methods of aiding the companies; in 1839, for example, the Massachusetts Democratic Convention denounced "the system adopted by our Whig Legislature, of loaning the credit of the State to Corporations, under such circumstances, that the profit, if any, will enure to the corporators, and the losses, if any, fall solely on the State." [34] Yet through most of the country the popular desire for internal improvements was so strong and the inability of private business to raise sufficient funds for the major projects was so manifest that the methods of mixed enterprise and of public works continued to retain popular support.

In the longer run these methods were undermined by two developments. The first was the growing disillusion with the losses suffered by the state and local authorities on many, though by no means all, of their ventures in public construction and mixed enterprise. The second was the increase in the self-confidence of business enterprise with the growing ability of the private corporation to raise capital in large amounts at home and abroad. The change was neither orderly nor clearcut—as witness the history of federal land grants—and it took place at different times in different parts of the country. In Pennsylvania, as Professor Hartz has shown, a climax was reached in the year 1857 when a constitutional amendment forbade investment in mixed corporations by state and local authorities, and when the principal part of the state's system of public works was sold to the Pennsylvania Railroad which now, in spite of its mixed origins, stood out as the example of the great corporate enterprise.[35] As this case suggests, the growing strength of the more profitable companies must be considered along with the taxpayer's opposition to further drain on government funds in any interpretation of the process by which the old copartnerships of public and private interest came to be dissolved.

These associative efforts were a part of the development of a young and eager America. It is no part of the purpose of this paper to advocate a return to mixed enterprise. Nor do I urge that the American Philosophical Society should today appoint a committee to set on foot a program of American improvements. Yet it may be of service to point out how large a part the conscious pursuit of public ends and a sort of public and community planning played in an important phase of the economic development of the United States. The problem of how best to use private energy and interest for the common good remains with us. In facing it there is ample room for the ingenuity and public spirit of men who fit Senator Bayard's description of those members of the Society who went out to look over the ground for the Chesapeake and Delaware Canal—men, as he said, "whose views, extending beyond themselves, are employed upon objects of general benefit and utility." [36]

[33] Richardson, James D., *A compilation of the messages and papers of the presidents* II: 483–493, 508–517, Washington, 1909.

[34] Bliss, *op. cit.*, 54.

[35] Hartz, *op cit.*, 123–125, 162–165, 175–179.

[36] *Annals of Congress,* Ninth Congress, Second Session, 55–66.

CEPHEID VARIABLE STARS IN THE SMALL MAGELLANIC CLOUD

HARLOW SHAPLEY AND VIRGINIA McKIBBEN NAIL

Harvard College Observatory

(*Read November 21, 1947*)

I. ON UNIFORMITY THROUGHOUT TIME AND SPACE

WE HAVE two postulates, not very thoroughly tested, upon which we lean heavily in our explorations of the universe. We assume the universality of the natural laws throughout the parts of the Metagalaxy we can study, and assume a high degree of uniformity in the nature and distribution of the material of which stars and nebulae are composed. We do not like to contemplate seriously the possibility that the natural constants, like the velocity of light, the charge on the electron, the gravitational constant, are either changing gradually or are erratic in numerical value from place to place or from time to time. We want to believe that the chemistry and physics of our Galaxy is identical with the chemistry and physics of the Andromeda Nebula, of the Clouds of Magellan, of the galaxies that are 8,000,000 light years distant in Virgo, and hopefully, even of those stellar systems much deeper in space, out to the limits reached by our exploring telescopes. But how trustworthy are the uniformity postulates?

There is, of course, much evidence that non-uniformity is common in local situations. We have lifferences in the chemistry of the atmospheres of Earth, Mars, and Jupiter. We have differences only partially explained in the galactic concentrations of stars of various types, and the not yet fully understood inequalities in the amounts of carbon or silicon or titanium in the atmospheres of stars that appear otherwise alike. We find that the types of stars are different in the outer part of a spiral galaxy (on the average) from those in the concentrated nucleus. Seares pointed out the difference in color between nucleus and spiral arms long ago; and the first detailed photometric studies of globular clusters showed that they are dominantly populated with a type of giant star that is essentially absent from the solar neighborhood.

Except for such differences, none of which implies that basic laws of nature are inapplicable from place to place, we find much similarity from one galaxy to another. The color of galaxies indicates that the distribution of stellar spectral classes averages much the same the world over, even though the stars cannot be seen separately in the distant systems.

Comparing our Galactic System with nearby Messier 33 and the Andromeda Nebula, we uncover similarities, but when we go to the nearest of all the external galaxies, the Clouds of Magellan, we come upon great differences in structure. Are there other conspicuous differences? Do stars in all respects operate the same in these irregular galaxies as in the more symmetrical and steady spheroidal and spiral systems?

We further need reassurance that our telescopes, in their relatively inadequate surveys of space, are actually dealing with a fair sample of the whole universe. If so, we can then extrapolate to grand ideas about the total of matter in space, and the general nature of space and time. Without such assurance, and some good evidence of uniformity throughout the universe, the investigator of extragalactic problems would be practically defeated before he starts.

Heretofore we have assumed general uniformity among stars, regardless of the structural differences for the galaxies. The Magellanic Clouds now provide a laboratory to study, by a somewhat selective procedure, the nature of the stars in a foreign galaxy. The Clouds have been called the Astronomical Toolhouses because of the important information they yield on the absolute luminosities of various types of stars, and because they have supplied the most important data for the period-luminosity relation of Cepheid variables. Recently we have been able to show that they contain eclipsing stars similar to Beta Lyrae and can give us an accurate determination of the candlepowers of such objects.

The Large Cloud has giant red and blue stars, some of them variable, some invariable; it has planetary nebulae and irregular nebulosities of various sorts, and open and globular clusters. The richness in Cepheid variables makes the Clouds the most important of all places for the study of

pulsation. They are, in a sense, a mirror in which we can best see ourselves.

Not so long ago we found some peculiarities in the characteristics of Cepheid variables in the Small Magellanic Cloud. In one important respect—the frequency distribution of periods—they do not agree with the Cepheids in the Large Cloud, and especially with those in our own Milky Way system. Is the uniformity of nature breaking down a little in this particular basic phenomenon of gas and heat dynamics—the pulsing of a Cepheid variable star? More recently we have come upon another difference, not so well defined observationally as the first peculiarity, between the Cepheid variables of the Magellanic Clouds and of the Galactic System. To present this second intimation that irregular galaxies may deviate in some details from what we suppose to be normal, is one object of the present communication on the light curves of Cepheids in the Small Cloud.

II. HISTORICAL NOTE

The first variable star known in the Small Magellanic Cloud was discovered by Miss Henrietta S. Leavitt in 1904,[1] and since that time Harvard astronomers, chiefly Miss Leavitt, have brought the number of variables up to well over one thousand.[2] Many other stars are suspected. From the beginning it was noted that a great majority (perhaps 90 per cent) of the variables in the Small Cloud are of the Cepheid class. The periods range from one up to more than one hundred days, but mostly they are short. From her early studies, Miss Leavitt found a relation between the apparent magnitudes of the Cepheids and the length of the periods. This observation was the beginning of the work that led to the period-luminosity relation, connecting logarithm of period with absolute magnitude. The relation has served as the key to most of the subsequent measuring of large stellar distances.

The variable stars of the Small Magellanic Cloud have been studied intensively at the Harvard Observatory during the past twenty years.[3] We now have light curves and accurate determinations of period length for nearly seven hundred. They are spread throughout the whole Cloud configuration, and in the denser parts are difficult to detect and measure. Half a dozen different telescopes at the southern station of Harvard Observatory have provided plates of various scales and exposure lengths. At least nine-tenths of the variable stars brighter than absolute magnitude zero have been discovered (except possib'y for those of very small range). Reference will be made later to a peculiarity in the distribution of variables throughout the Cloud, and also to the unusual distribution of period lengths.

III. FORTY-NINE SELECTED VARIABLES IN THE SMALL CLOUD

Some years ago we made a study of the light curves of forty Cepheid variable stars in the Large Magellanic Cloud.[4] The object of that particular investigation was to test the change of form of light curve with period length in a galaxy where all magnitudes could be determined on a uniform scale, a procedure that is not possible for a similar number of variable stars within our own galactic system. For the galactic Cepheids, the wide distribution over the sky prevents a uniform zero point and scale for the magnitudes. Homogeneity is essentially impossible. But in the Large Cloud, and still more easily in the Small Cloud, many

[1] Pickering, E. C., Seventy-six new variable stars, *Circular Harv. Coll. Observ.* No. 79, 1904.

[2] Leavitt, H. S., 1777 variables in the Magellanic Clouds, *Ann. Harv. Coll. Observ.* **60** (4), 1908; Shapley, H., and V. McKibben, A summary of the periods and median magnitudes of Magellanic Cloud Cepheids, *Circular Harv. Coll. Observ.* No. 439, 1940; McKibben, V., R. A. Craig, and F. W. Wright, Periods for 307 variables in the Small Magellanic Cloud, *Circular Harv. Coll. Observ.* No. 444, 1942; Nail, V. McK., 339 new variable stars in the Small Magellanic Cloud, *Ann. Harv. Coll. Observ.* **109** (6), 1942.

[3] The most significant of the Harvard papers on the Cepheid variables of the Small Cloud, in addition to those cited in footnotes 2 and 8, are the following: Pickering, E. C., and H. S. Leavitt, Periods of 25 variable stars in the Small Magellanic Cloud, *Circular Harv. Coll. Observ.* No. 173, 1912; Shapley, H., I. Yamamoto, and H. H. Wilson, The Magellanic Clouds, VII. The photographic period-luminosity curve, *Circular Harv. Coll. Observ.* No. 280, 1925; Shapley, H., Galactic and extragalactic studies, VIII. A new determination of the period-luminosity curve, *Proc. Nat. Acad. Sci.* **26**: 541 (*Harv. Reprint* No. 207), 1940; Shapley, H., V. McKibben, and R. A. Craig, Galactic and extragalactic studies, XIV. On the magnitude dispersion in the period-luminosity relation, *Proc. Nat. Acad. Sci.* **28**: 192 (*Harv. Reprint* No. 240), 1942; Shapley, H., and V. McKibben, Galactic and extragalactic studies, XV. On the distribution of periods for 343 Cepheids in Small Magellanic Cloud, *Proc. Nat. Acad. Sci.* **28**: 200 (*Harv. Reprint* No. 241), 1942; Eclipsing stars in the Magellanic clouds, *Bull. Harv. Coll. Observ.* No. 916, 1942; Shapley, H., and V. McK. Nail, Galactic and extragalactic studies, XIX. Giant variable stars of the Loop Nebula. *Proc. Nat. Acad. Sci.*, **34**: 146 (*Harv. Reprint* No. 306), 1948.

[4] Shapley, H., and V. McKibben, The light curves of forty selected Cepheids in the Large Magellanic Cloud, *Ann. Harv. Coll. Observ.* **90** (10), 1940.

variable stars of varied periods can be measured with the aid of a single master set of magnitude standards, or a closely allied group of standard sets.

Because of the large number of variable stars in the Small Cloud, we have been able to select a sample in which all period lengths are appropriately represented. These forty-nine stars, moreover, are clear of observational difficulties, such as crowded fields, background nebulosities, and troublesome star companions. The magnitude standards have been based on a single master sequence, and the secondary sequences used for some of the individual stars have been carefully intercompared with this master.

The photographs used for the measuring of the light variations were made with the Bruce 24-inch refractor of the South African station of the Harvard Observatory. (A few plates were made before 1927, while the station was still near Arequipa, Peru.) For the light curves, approximately twenty thousand estimates were made—

TABLE 1

HV No.	New Period in Days	Period Correction	Log Period	Photographic Magnitudes				No. of Obs.	Pulse-index
				Max.	Min.	Range	Med.		
1505	1.251220	−0.000230	0.097	16.01	16.82	0.81	16.42	197	15.4
1513	1.36142	+0.02998	0.134	16.25	16.85	0.60	16.55	198	6.1
10364	1.503053	−0.001373	0.177	16.09	17.05:	0.96:	16.57:	249	25 0:
2127	1.83085	+0.00312	0.263	15.79	16.40	0.61	16.10	200	8.0
1446	1.8721	−0.1101	0.272	16.00	17.25	1.25	16.62	182	18.2
2128	2.268759	−0.001549	0.356	15.48	16.54	1.06	16.01	200	18.2
2076	2.499041	−0.000011	0.398	15.50	16.74	1.24	16.12	269	20.0
2809	2.505611	−0.000011	0.399	15.36	16.53	1.17	15.94	184	15.4
2344	2.524408		0.402	15.96	16.62	0.66	16.29	189	8.7
2796	2.89383	−0.00003	0.461	15.79	16.72	0.93	16.26	179	10.0
1460	2.91286	+0.00014	0.464	15.36	16.60	1.24	15.98	202	18.2
2053	3.219886		0.508	15.75	16.58	0.83	16.16	199	20.0
2368	3.2234		0.508	15.92	16.81	0.89	16.36	192	12.5
2361	3.250875	+0.001125	0.512	16.03	16.98	0.95	16.51	178	13.3
11206	3.399471	+0.007127	0.531	15.73	16.41	0.68	16.07	201	15.4
2472	3.606651		0.557	15.71	16.49	0.78	16.10	189	9.5
2085	3.716671	−0.012611	0.570	15.82	16.76	0.94	16.29	267	13.3
858	3.83273	−0.00451	0.583	15.22	16.43	1.21	15.82	200	20.0
2795	3.913320	+0.000080	0.593	15.48	16.58	1.10	16.03	187	16.7
2788	4.355729	+0.000271	0.639	15.15	16.20	1.05	15.67	192	10.5
1619	4.37535	−0.00585	0.641	15.57	16.40	0.83	15.98	200	14.3
1425	4.54717	−0.00017	0.658	15.30	16.51	1.21	15.90	201	11.8
851	4.685052	−0.006752	0.671	15.23	16.42	1.19	15.83	199	18.2
2334	4.691411		0.671	15.75	16.66	0.91	16.21	191	7.7
2826	4.709949	+0.000151	0.673	15.39	16.28	0.89	15.83	193	15.4
951	4.880649		0.688	15.66	16.67	1.01	16.16	186	12.5
2861	4.93822		0.694	15.50	16.49	0.99	16.00	198	8.7
2031	5.248655	−0.008361	0.720	14.96	16.25	1.29	15.60	275	12.5
1818	5.458843		0.737	15.83	16.50	0.67	16.16	294	7.7
815	5.79478	−0.04121	0.763	15.52	16.27	0.75	15.89	201	9.5
2727	5.94997	+0.00063	0.775	14.95	16.16	1.21	15.55	237	10.5
2619	5.97746	+0.00014	0.777	14.72	16.10	1.38	15.41	214	10.0
2124	6.06454	−0.01774	0.783	15.31	16.13	0.82	15.72	199	10.0
5954	6.13595	−0.00595	0.788	15.51	16.07	0.56	15.79	237	8.0
1492	6.292208	+0.000392	0.799	14.83	16.02	1.19	15.42	201	11.8
2773	6.349005	−0.000005	0.803	15.03	16.08	1.05	15.55	232	8.7
2536	6.37075	+0.00025	0.804	14.51	15.82	1.31	15.17	238	7.4
2685	6.5415		0.816	14.86	15.94	1.08	15.40	237	7.7
2790	6.60615	+0.00015	0.820	15.56	16.46	0.90	16.01	185	11.8
1400	6.648163	+0.001837	0.823	15.23	16.05	0.82	15.64	201	6.5
2358	6.67690	−0.00690	0.825	15.32	16.02	0.70	15.67	218	10.0
1855	6.83990	−0.02850	0.835	15.51	16.27	0.76	15.89	200	11.8
2337	6.86365	−0.00065	0.837	14.85	16.02	1.17	15.44	207	11.8
935	7.0674	−0.0003	0.849	14.63	15.82	1.19	15.23	249	10.0

TABLE 1—*Continued*

HV No.	New Period in Days	Period Correction	Log Period	Photographic Magnitudes				No. of Obs.	Pulse-index
				Max.	Min.	Range	Med.		
2491	7.1327	+0.0003	0.853	14.80	15.92	1.12	15.36	218	11.1
2752	7.1943	−0.0043	0.857	15.78	17.04	1.26	16.41	191	8.7
927	7.5282	−0.0002	0.877	14.87	16.07	1.20	15.47	199	7.7
2081	7.60792	+0.01723	0.881	14.73	15 47	0.74	15.10	201	6.9
816	7.94085	−0.03885	0.900	15.21	16.01	0.80	15.61	201	7.4
2722	8.02652	−0.00052	0.905	14.47	15.73	1.26	15.10	220	8.3
1338	8.4933		0.929	14.59	15.83	1.24	15.21	201	11.8
1790	8.872721		0.948	14.84	15.72	0.88	15.28	298	9.5
2103	8.9839		0.953	15.22	15.76	0.54	15.49	201	9.5
971	9.29619	+0.00581	0.968	14.56	15.66	1.10	15.11	200	10.0
836	9.40344	+0.00016	0.973	14.70	15.75	1.05	15.22	201	14.3
1334	9.45144	−0.00144	0.975	14.47	15.73	1.26	15.10	201	10.0
952	9.5715	+0.0005	0.981	14.95	16.02	1.07	15.48	197	9.1
1768	9.808210	+0.061790	0.992	15.12	15.55	0.43	15.33	298	6.2
2060	10.18447	−0.00447	1.008	14.35	15.31	0.96	14.83	274	7.4
818	10.33506	+0.00094	1.014	14.52	15.78	1.26	15.15	201	11.8
1426	10.43885	+0.00115	1.019	14.95	15.94	0.99	15.45	273	4.9
2432	10.9245	+0.0005	1.038	14.35	14.97	0.62	14.66	201	9.1
2063	11.166230	+0.076926	1.048	14.71	15.61	0.90	15.16	200	4.4
999	11.2353	+0.0247	1.051	14.56	15.15	0.59	14.86	201	11.8
2017	11.4072	−0.0072	1.057	14.43	15.55	1.12	14.99	201	4.0
2787	11.442	−0.042	1.058	14.48	15.51	1.03	14.99	200	4.3
1610	11.644997	+0.000003	1.066	14.64	15.85	1.21	15.24	199	3.8
905	11.85787	+0.00013	1.074	14.26	15.66	1.40	14.96	235	4.4
857	11.9831	−0.0011	1.079	14.16	15.38	1.22	14.77	201	6.2
856	12.155	+0.001	1.085	14.72	15.84	1.12	15.28	201	16.7
1365	12.414156	+0.001144	1.094	14.63	15.74	1.11	15.18	201	6.1
2052	12.575	+0.705	1.099	13.99	15.11	1.12	14.55	201	4.3
1351	13.08440	−0.00440	1.117	14.60	15.54	0.94	15.07	291	5.9
827	13.4657	+0.0043	1.129	14.27	15.34	1.07	14.80	201	4.2
2463	13.95235	−0.00235	1.145	13.80	15.41	1.61	14.60	201	4.4
1006	14.21141	+0.00059	1.153	14.25	15.75	1.50	15.00	197	5.1
1335	14.3806		1.158	14.36	15.59	1.23	14.98	202	4.6
933	15.5441	+0.0009	1.192	14.66	16.15	1.49	15.40	198	14.3
1328	15.8396	−0.0396	1.200	13.83	15.10	1.27	14.46	286	4.6
1333	16.289	+0.171	1.212	14.42	15.79	1.37	15.10	201	6.5
1342	17.93849	−0.00349	1.254	14.00	14.67	0.67	14.34	201	5.7
1005	18.709759	+0.000241	1.272	13.96	15.42	1.46	14.69	199	15.4
817	18.900		1.276	13.43	14.59	1.16	14.01	200	6.2
1003	24.388661	+0.006339	1.387	13.22	14.44	1.22	13.83	201	14.3
934	28.18648	−0.00648	1.450	14.00	15.50	1.50	14.75	220	11.1
823	31.925	+0.015	1.504	13.84	15.04	1.20	14.44	200	20.0
855	32.9618	+0.0382	1.518	13.84	15.24	1.40	14.54	201	10.5
953	47.82607	−0.12607	1.680	12.50	13.87	1.37	13.18	201	10.0
2447	118.6394	−0.1394	2.074	12.65	13.66	1.01	13.16	201	5.3

on the average, for each star two hundred plates, twice measured. The distribution by years of the plates used for light curves are as follows:

1896	through 1905	15 plates
1906	through 1915	1
1916	through 1925	34
1926	through 1935	69
1936	through 1940	83
1941	through 1946	97

Plates of the last group were used for only a few stars by Mrs. Nail. The extensive plate material now available has also permitted the improvement of the values of the periods for most of the variable stars. The corrections of period through these revisions are shown in column 3 of table 1. For seven stars no revision is necessary. Although the observations cover an interval of forty-nine years, there is no certain evidence of a changing period, except for the abnormal super-giant HV

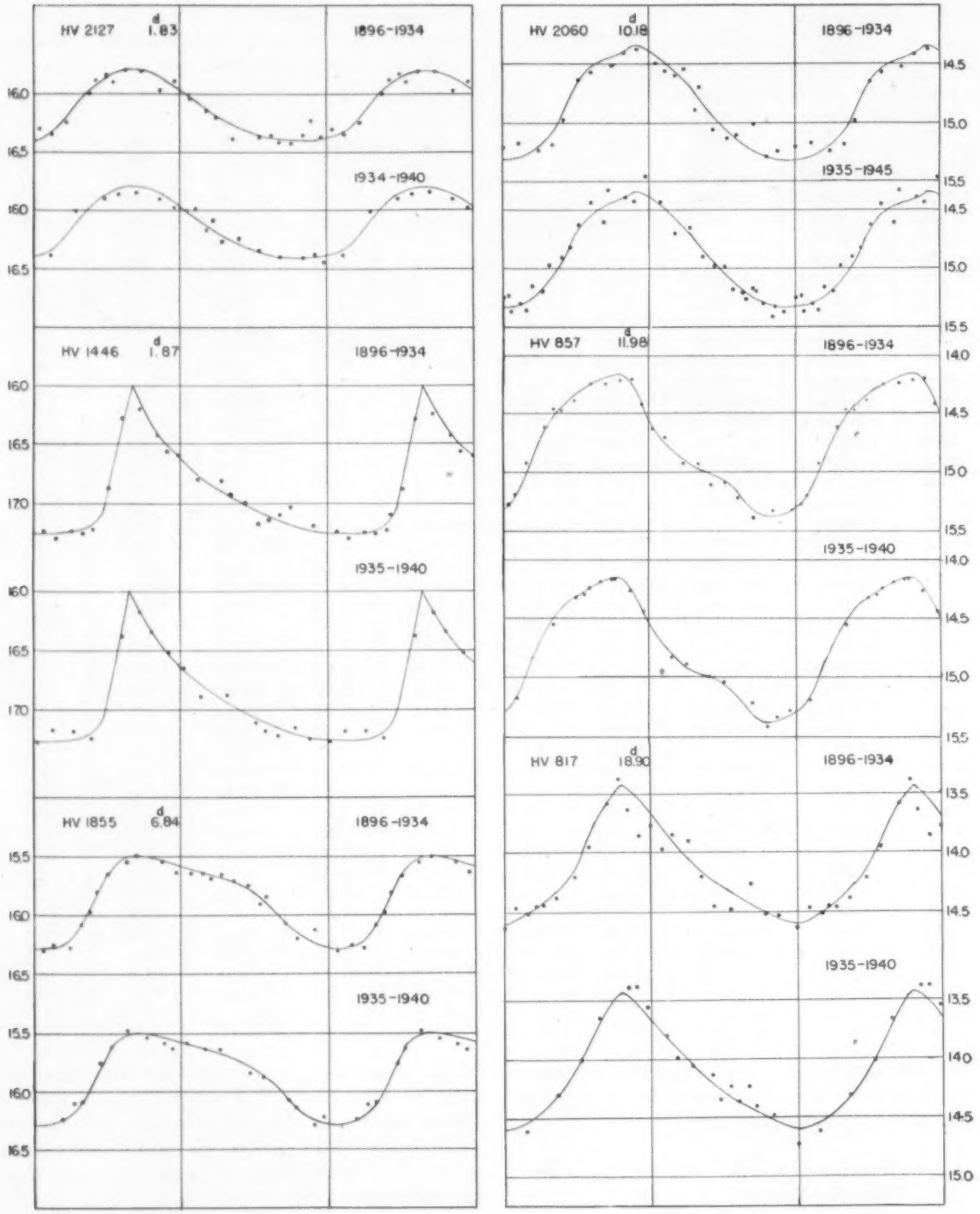
HV 2127 d 1.83
1896-1934
1934-1940
HV 1446 d 1.87
1896-1934
1935-1940
HV 1855 d 6.84
1896-1934
1935-1940
HV 2060 d 10.18
1896-1934
1935-1945
HV 857 d 11.98
1896-1934
1935-1940
HV 817 d 18.90
1896-1934
1935-1940

FIG. 1.

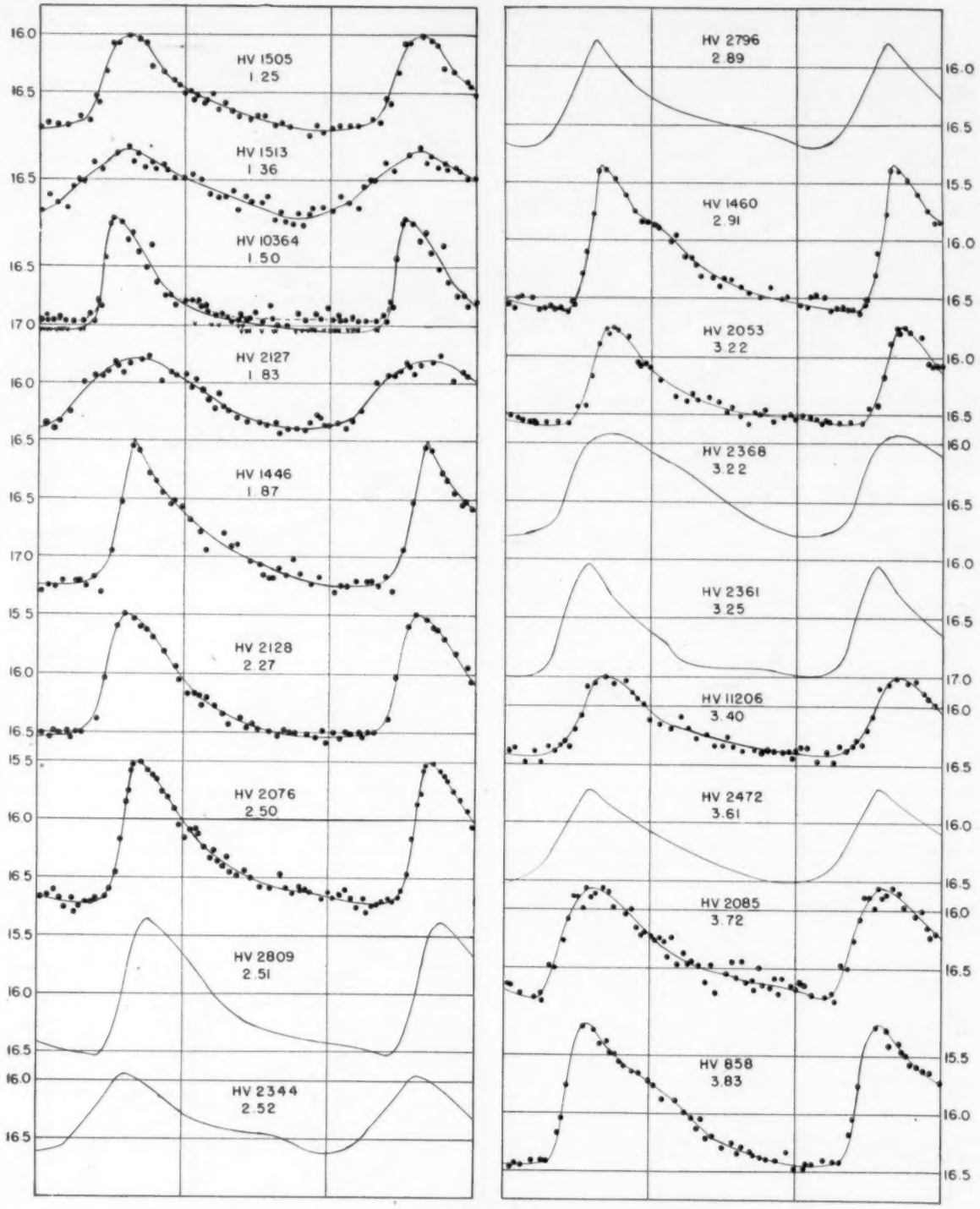
HV 1505
1.25
HV 1513
1.36
HV 10364
1.50
HV 2127
1.83
HV 1446
1.87
HV 2128
2.27
HV 2076
2.50
HV 2809
2.51
HV 2344
2.52
HV 2796
2.89
HV 1460
2.91
HV 2053
3.22
HV 2368
3.22
HV 2361
3.25
HV 11206
3.40
HV 2472
3.61
HV 2085
3.72
HV 858
3.83

FIG. 2 [a].

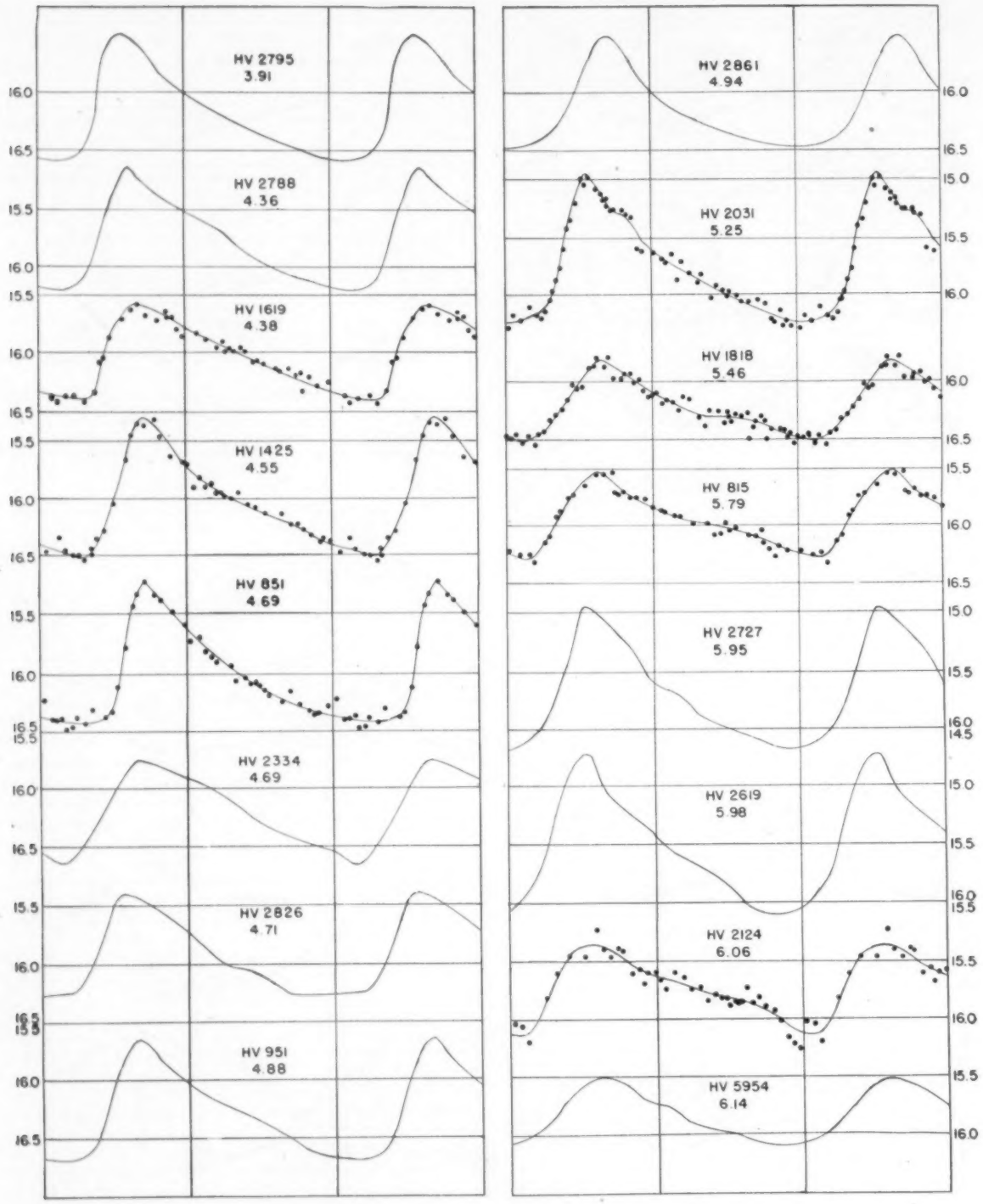
HV 2795
3.91
HV 2788
4.36
HV 1619
4.38
HV 1425
4.55
HV 851
4.69
HV 2334
4.69
HV 2826
4.71
HV 951
4.88
HV 2861
4.94
HV 2031
5.25
HV 1818
5.46
HV 815
5.79
HV 2727
5.95
HV 2619
5.98
HV 2124
6.06
HV 5954
6.14

FIG. 2 [b].

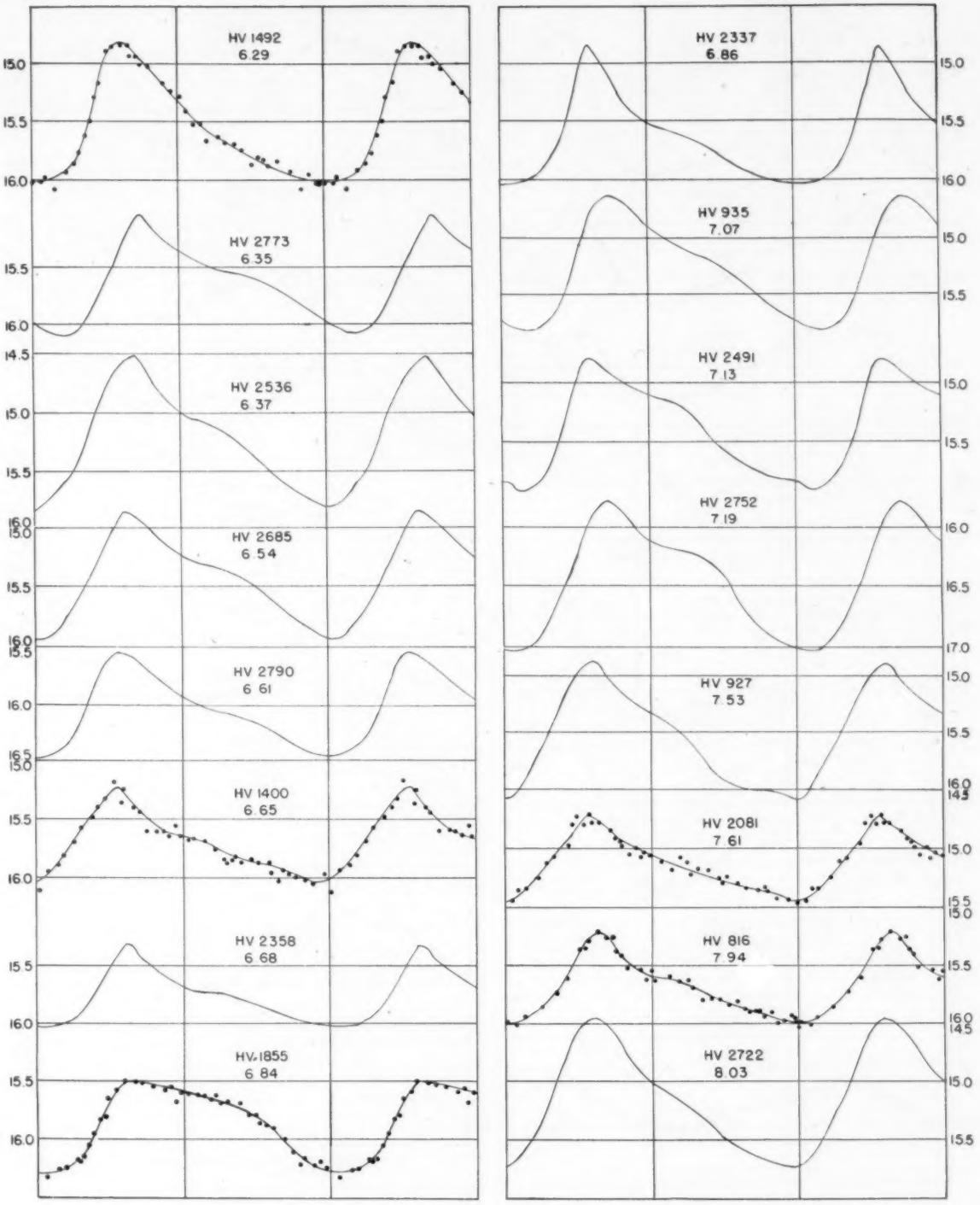
HV 1492
6.29
HV 2773
6.35
HV 2536
6.37
HV 2685
6.54
HV 2790
6.61
HV 1400
6.65
HV 2358
6.68
HV 1855
6.84
HV 2337
6.86
HV 935
7.07
HV 2491
7.13
HV 2752
7.19
HV 927
7.53
HV 2081
7.61
HV 816
7.94
HV 2722
8.03

FIG. 2 [c].

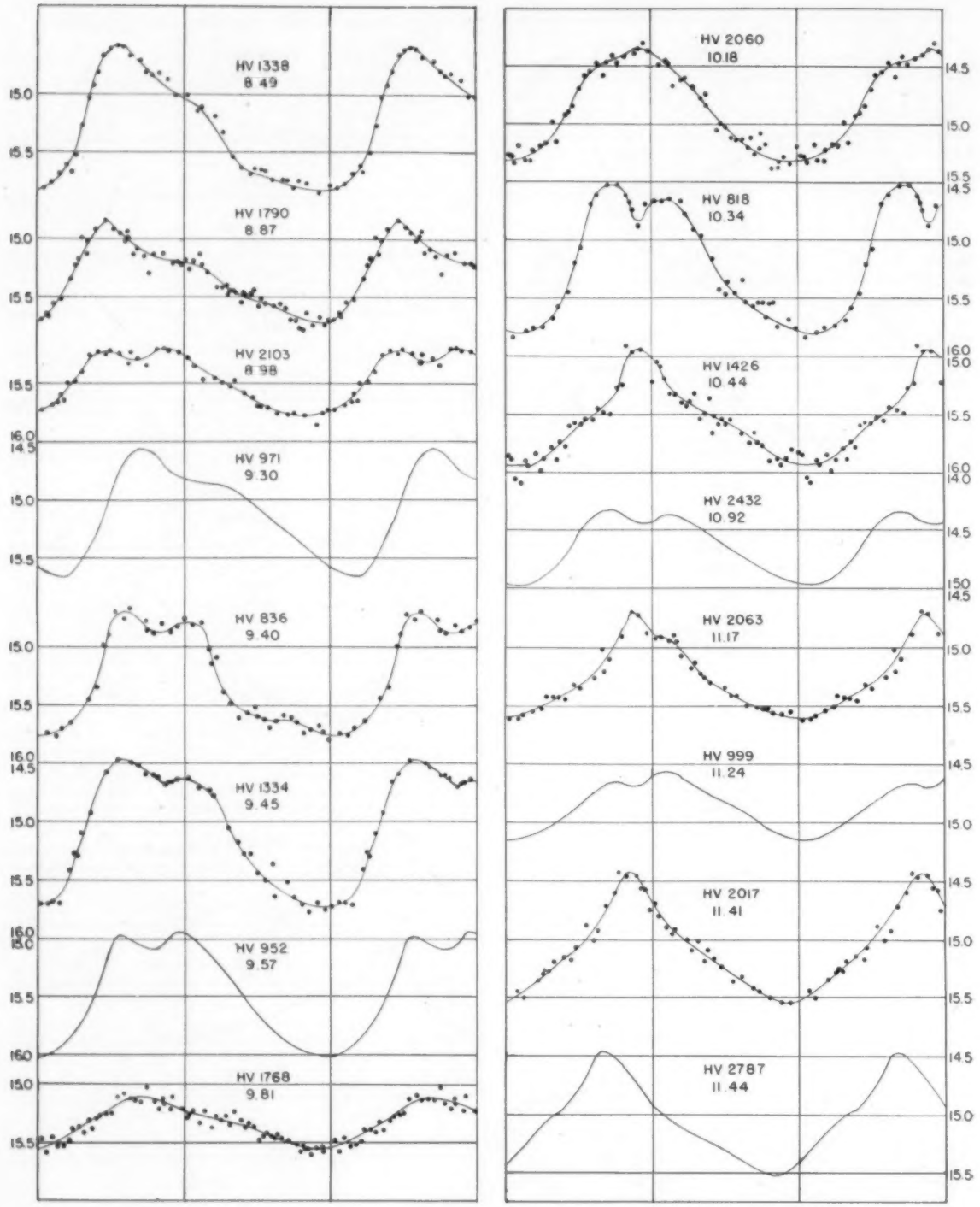
HV 1338
8.49
HV 1790
8.87
HV 2103
8.98
HV 971
9.30
HV 836
9.40
HV 1334
9.45
HV 952
9.57
HV 1768
9.81
HV 2060
10.18
HV 818
10.34
HV 1426
10.44
HV 2432
10.92
HV 2063
11.17
HV 999
11.24
HV 2017
11.41
HV 2787
11.44

FIG. 2 [d].

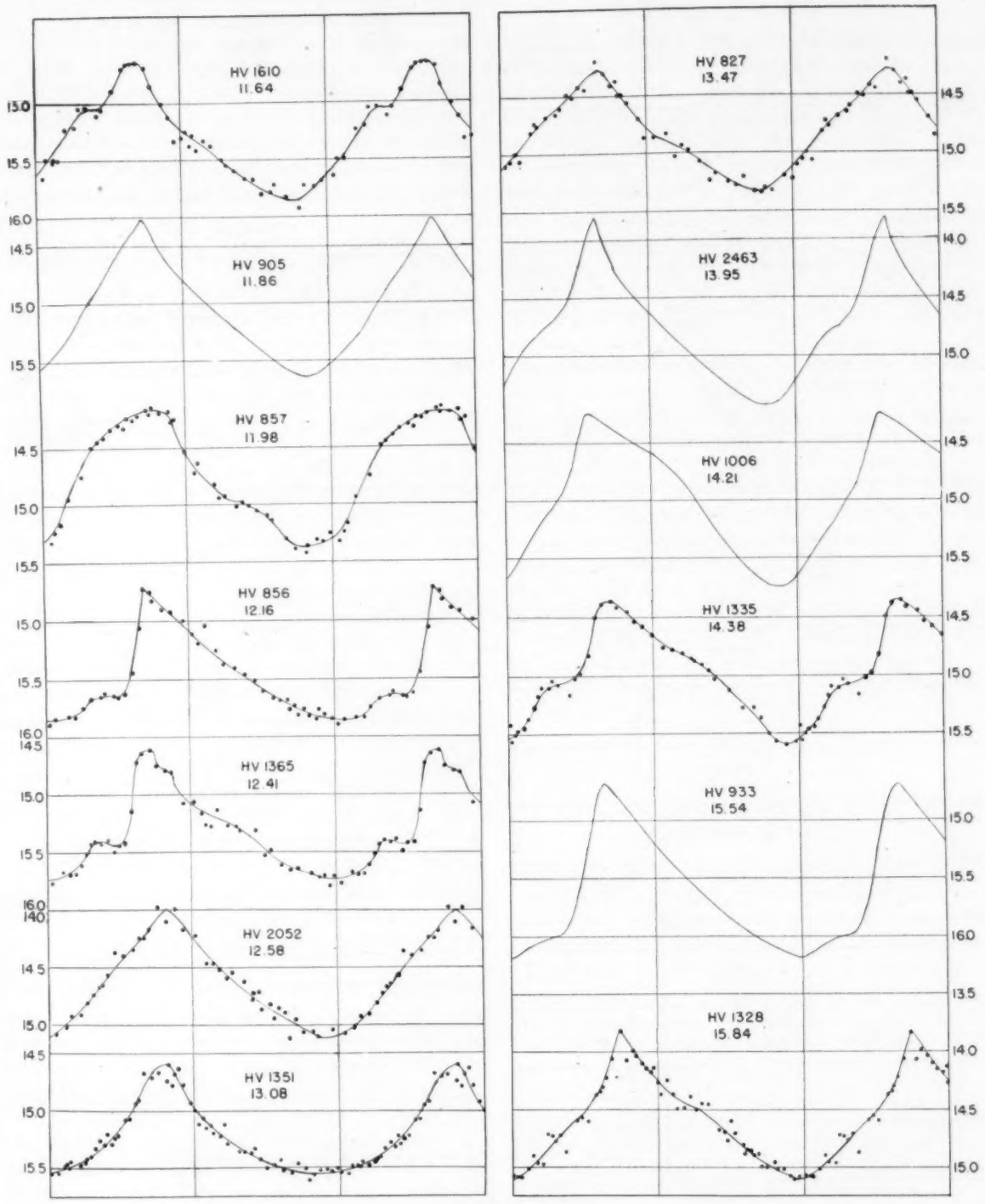
HV 1610
11.64
HV 905
11.86
HV 857
11.98
HV 856
12.16
HV 1365
12.41
HV 2052
12.58
HV 1351
13.08
HV 827
13.47
HV 2463
13.95
HV 1006
14.21
HV 1335
14.38
HV 933
15.54
HV 1328
15.84

FIG. 2 [e].

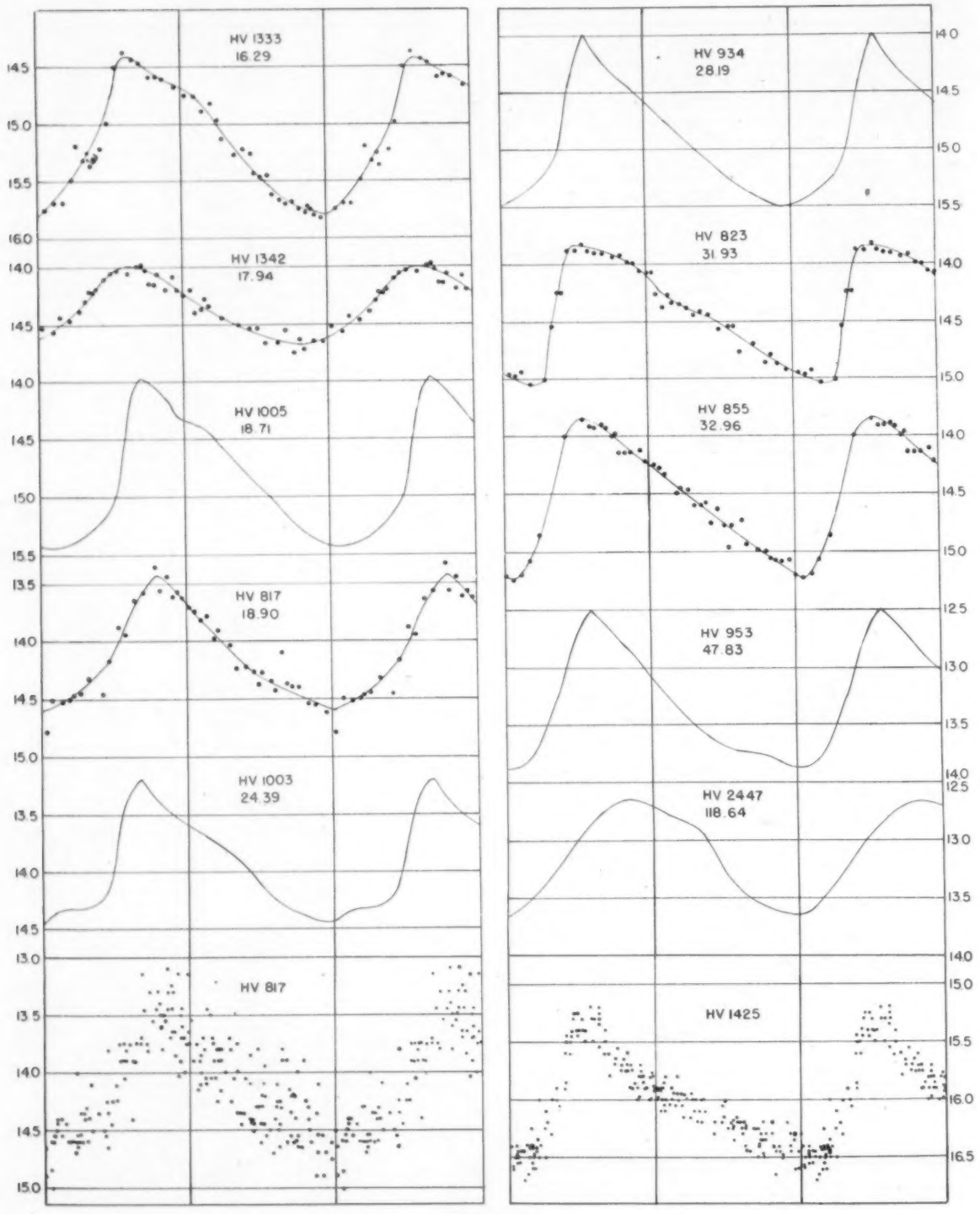
HV 1333
16.29
HV 1342
17.94
HV 1005
18.71
HV 817
18.90
HV 1003
24.39
HV 817
HV 934
28.19
HV 823
31.93
HV 855
32.96
HV 953
47.83
HV 2447
118.64
HV 1425

FIG. 2 [f].

2447. period 118.6394 days, which is under special study. The constancy of the periods and light curves is suggested by figure 1, where for six variables the data are divided to show how well the mean curve fits early and recent observations. Small period changes have been found for several galactic Cepheids by Mrs. Gaposchkin in her current study of the bright variables of the Milky Way; but her material is much more extensive, and possibly is better distributed for the finding of changes in period.

IV. EIGHTY-NINE CEPHEID LIGHT CURVES

The normal points for the light curves of these variables in the Small Cloud are published in *Harvard Annals* **109** (11), 1948. The summarized data, derived from normal points and light curves for each variable star, are given in table 1, which includes also comparable data for the 40 variable stars previously studied in the Large Cloud. The variables are arranged in order of period length. The successive columns require no explanation, except that the pulse-index (last column) is a parameter describing the asymmetry of the light curve.[5]

The individual light curves are reproduced on six pages as figure 2, again arranged in order of period length. The previously published light curves of variables in the Large Magellanic Cloud are also given (without plotting the normal points). At the end of the series of curves, two are repeated with the individual observations plotted in order to illustrate the observational scattering for an unsteady star, HV 817, which has the largest scattering around the mean light curve, and for a typical variable, HV 1425, for which the scatter is relatively small and can be attributed largely to errors in making estimates of in-focus images. For the former the average deviation from the mean light curve is $\pm 0^m.06$; and for the latter, $\pm 0^m.025$.

An inspection of the light curves shows the now well-known irregularity in the maxima for variables with periods near ten days. Aside from this feature, no striking progression appears, either in range or asymmetry (but see correlation 5 below).

A convenient parameter to define the shape of a Cepheid light curve is one that measures the relative speed of the most vigorous part of the rise to maximum light. We define this pulse-index as follows:

$$p.i. = P/(t_{M'} - t_{m'}),$$

where the period P and the times t are expressed in the same units, and M' refers to the magnitude two tenths of the amplitude fainter than maximum, and m' to the magnitude two tenths of the amplitude brighter than the minimum. When this quantity, which by definition increases in numerical value with increasing steepness of the rise, is correlated with the period, we find that for periods between 5 and 12 days the rise is relatively less steep than for shorter or longer periods. But the difference is not strongly marked. A study of this material through the use of harmonic analysis has been made by Mrs. C. P. Gaposchkin,[6] but the results are indecisive. Light curves of small range, of large range, with or without humps on the descending branch are all intermingled at nearly all period lengths. The hump on the light curves at the beginning of the rise, however, appears only for some stars with $P > 11.6$ days. Especially noteworthy are the conspicuously different light curves for stars of nearly identical periods, for example, HV 2127 and HV 1446, and also HV 1855 and HV 2337.

Correlation coefficients have been computed for various quantities with the following results (the 40 Large Cloud stars are included):

1. r(p.i., amp.) = 0.02
2. r(p.i., M) = 0.41
3. r(p.i., log P) = 0.44
4. $r(M$, log $P)$ = 0.91
5. r(amp., log P) = 0.35
6. r(amp., M) = 0.35

The only conspicuous correlation is No. 4, the well-known period-luminosity relation.

Turning to figure 2, we note again the double maxima stars. They appear in both Magellanic Clouds and all fall within the period interval of 8.9 days to 11.2 days. Stars of this sort have been found among the variables of the Milky Way, with periods between 7.92 and 9.55 days. The more conspicuous ones are the following: W Geminorum, AC Monocerotis, SVS 949 Cassiopeiae, S Sagittae, and SX Velorum. The double maxima stars are clearly identified in the Magellanic Clouds; but in our Galaxy the light curves grade off into those that have conspicuous

[5] Shapley, H., Galactic and extragalactic studies, XVIII. The pulse index for eighty-nine variable stars in the Magellanic Clouds, *Proc. Nat. Acad. Sci.* **34**: 27 (*Harv. Reprint* No. 305), 1948.

[6] Payne-Gaposchkin, Cecilia, On the light curves of Cepheid variables, *Astr. Jour.* **52** (8): 218–226 (*Harv. Reprint*, Ser. II, No. 18), 1947; Abstract, *Astr. Jour.* **53** (7): 193, 1948.

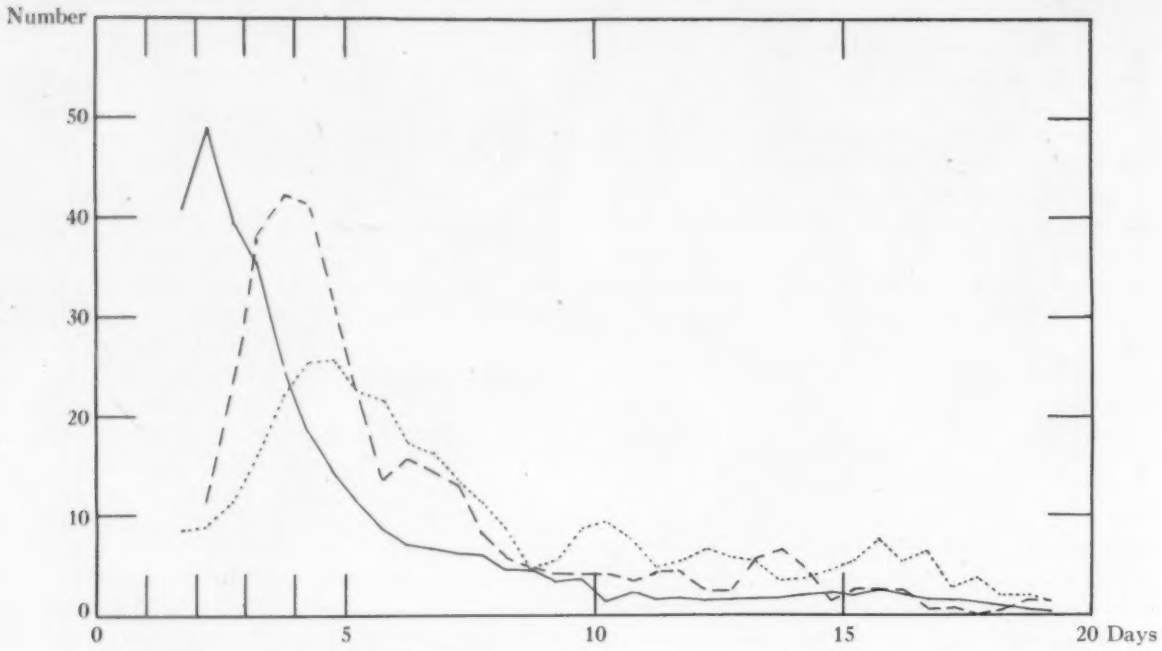

FIG. 3. The frequency distribution of the periods of classical Cepheids with periods less than 20 days. The full, broken, and dotted lines refer respectively to the Small Magellanic Cloud, the Large Magellanic Cloud, and the Galactic System.

humps on the descending branch. The median period for the galactic Cepheids with double maxima is 8.2 days; for the two Magellanic Clouds together it is 9.6. The material is not abundant, but the difference of 1.4 days appears to be significant.

V. THE CONTRAST IN PERIOD FREQUENCIES

The differences between the Clouds and our Milky Way system, both in period stability of classical Cepheids, referred to above, and in the period lengths of the stars that have double maxima, are perhaps not much more than accidental differences that might disappear with the lapse of time or with the study of additional variables.

But the great rarity, or complete absence, of cluster-type variables in the Clouds, in contrast with their abundance in our Milky Way in high and low latitudes and especially in the star clouds near the galactic center, is an outstanding difference that additional observations cannot erase. This phenomenon, however, is not unique. A similar contrast exists among the globular star clusters where we may find great richness in short period Cepheids in one cluster and practically none at all in neighboring systems that otherwise seem to be almost identical in structure and population.

In the Small Cloud there is also a peculiarity in the frequency distribution of the periods of classical Cepheids that affords as striking a contrast with our Milky Way as does the absence of cluster variables. The peculiarity is illustrated in figure 3, where the distributions of the periods are compared for the Small Cloud, the Large Cloud, and the Milky Way. The Milky Way stars are of course those we can readily observe and they are, therefore, chiefly of the solar neighborhood. The ordinates in figure 3 are numbers of variables for each half-day of period length. But since in the three systems the numbers of variables entering the discussion are 531, 144, and 288, respectively, we have for the making of these comparison curves, reduced each assembly to the equivalent of 350 stars through multiplying the numbers in each half-day interval respectively by 0.66, 2.43, and 1.21.

In the several sections of the Small Cloud where the periods were specially studied for this research on frequency distribution, the survey was as complete as possible. But for the Large Cloud and for the Milky Way such thoroughness does not obtain, and therefore the effects of selection on the basis of amplitude or brightness may have en-

tered.[7] A selection on the basis of apparent brightness would of course favor the longer periods. Further studies may slightly displace the maxima (shown in figure 3) toward shorter periods for the Large Cloud and for the Milky Way. But we believe the shift will be small, and certainly it cannot eliminate the striking difference between the results for the Small Cloud and for the solar neighborhood.

In the Large Cloud only three periods of less than 2.5 days have been found, whereas in the Small Cloud 186 periods of less than 2.5 days are recorded for these thoroughly searched areas. In fact, of the 186 periods, 131 are less than 2.0 days.

It is seen from figure 3 that in comparison with the solar neighborhood the Small Cloud is relatively poor in Cepheids with periods between 10 and 20 days. The percentages are 27 and 9 respectively. For the Large Cloud the value is intermediate at 15 per cent.

A second peculiarity in the distribution of periods in the Small Cloud has already been reported,[8] but it is here mentioned again since the interpretation may involve the same considerations as pertain to the differences in median period length. Although the Small Cloud is decidedly irregular in structure, there is a central region of possibly one per cent of the Cloud where the star density is very high. The Cepheid variables lying in that region have a strong preference for long periods and high luminosity. Toward the edges of the Cloud the Cepheids are on the average much fainter and consequently of shorter period. The median period length for core, intermediate, and outer areas are, respectively, 6.47, 3.17, and 2.70.

A few long period Cepheids, to be sure, are far from the nucleus of the Small Cloud. (The same situation holds in our own Milky Way, where a concentration of so-called "16-day" Cepheids is found in the Sagittarius clouds, near the center of the Galaxy, but a few similar stars are scattered widely through other longitudes.) And Cepheids of intermediate period are in the nucleus, or more probably superposed upon it. The general trend, however, is unmistakable: supergiant Cepheids preferably in the regions of high stellar density; ordinary giant Cepheids out in the regions of relatively low stellar density.

Thus far no satisfying explanation is proposed for this distributional phenomenon. It has not been found in the Large Cloud, but the studies there are incomplete. Moreover, the investigation of our own galactic Cepheids must go much further before we can say whether the classical Cepheids of our system show correlations between characteristics of the surrounding stellar population and average period length. Possibly both the concentration of long periods in the denser areas and the abundance in the Small Cloud of the 2-day Cepheids, which are strangers elsewhere, can be linked up in a rather vague fashion with the prevailing chemistry of the stars—the hydrogen content, for example. The chemistry may vary from one stellar system to another; but, if so, are we not merely saying that the non-uniformity in nature, revealed by the Cepheids, includes non-uniformity in cosmic chemistry at a critical time in sidereal evolution? Obviously the questions here raised demand much further attention to theory and to observation.

[7] A current research on the variables in the Large Cloud will provide in that system also large regions where the survey of periods is complete for all magnitudes.

[8] Shapley, H., and V. McKibben, Galactic and extragalactic studies, V. The period frequency of classical Cepheids in the Magellanic Clouds, *Proc. Nat. Acad. Sci.* **26**: 105–115 (*Harv. Reprint* No. 192), 1940.